

## **TRANSPORTATION PLAN**

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## **INTRODUCTION**

Transportation planning in eastern Loudoun has one overriding goal: that is to provide safe and efficient transportation service without extensive disruption to the lives of the people who live in local neighborhoods. Given the projected three-fold increase in traffic volumes<sup>1</sup> in the area, careful design and location of new roads and improvements of existing roads will be necessary to realize this goal. The future transportation network must separate residential from commuter traffic. These separate road facilities will help to promote neighborhood identity and develop a sense of community in eastern Loudoun as defined in the Resource Management Plan (RMP). Alternative transit modes such as pedestrian facilities and bus service should also be developed to help alleviate road capacity problems and promote energy efficiency. Increased accessibility of all destinations for eastern Loudoun families will require planning coordination and cooperation with citizens. The Eastern Loudoun Area Plan will provide the framework for these decision and improvements.

The Transportation Plan offers generalized policies to govern highway planning and improvements for the future. These policies are defined in terms of their relationship to the RMP, and represent a response to citizen concerns expressed by the Eastern Loudoun Area Planning Committee. Specific transportation recommendations are offered with emphasis on the improvements and priorities defined by the Committee. The appropriate implementation techniques conclude the transportation element for the Eastern Loudoun Area Plan.

## **RMP POLICIES**

The immediate goal of transportation management in eastern Loudoun is to provide the necessary public improvements to local streets, highways and right-of-ways in order to meet the travel demands of the residents. With the great magnitude of growth projected for eastern Loudoun, many improvements will be necessary to safely and efficiently allow the travelling public accessibility to their destinations. Because eastern Loudoun travel characteristics depend so heavily on the automobile, transportation alternatives are limited in function and effectiveness. Therefore, this transportation plan must offer viable policies and recommendations for automobile traffic, while maintaining options for transit alternatives and making these options available for future use.

The items described below are specific policies adopted in the Resource Management Plan. Page references from the RMP follow each policy. The objective of this plan is to implement these policies. The transportation recommendations offered in this plan will become county policy and will be implemented with each new subdivision or transportation planning effort.

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The Metropolitan Washington Council of Governments, Transportation Planning Board, "Impact of Future Land Development on Transportation Facilities and Services", Phase I, September 6, 1979, p. 9.

1. RMP Provisions:

Transportation planning for eastern Loudoun will comply with the land use goals and policies as stated in the Resource Management Plan (RMP). Provisions for development of new roadways are detailed in the "*Community*" and "*Potential Community*" sections, in area-specific policies and standards of the RMP. (RMP, p. 218-231).

2. Future Planning:

Future transportation planning should assess all modes of traffic available to Loudoun County, and eastern Loudoun, and should include a regional analysis of the transit options (RMP, p. 228, #6). The Council of Governments (COG) Transportation Planning Program and the Transportation Planning Programs of the Virginia Department of Transportation (VDOT) should be incorporated into the County's planning program.

3. Design:

Transportation planning and design must promote the clustering concept of local neighborhoods and their singular identities without neighborhood disruption. (RMP, p. 196, #2).

4. Industrial Promotion:

Transportation improvements will be planned to encourage expansion of the eastern Loudoun industrial base and increase employment opportunities. (RMP, p. 195, #2).

5. Phasing:

Transportation improvements, especially new facilities, will be designed and phased over time for actual construction. The strain and impact of new residences on all public facilities should be limited and not disrupt the existing social fabric. (RMP, p. 197, #2; p. 229, #2; p. 231, #2)

6. Bus/Car Pooling:

Alternative modes of travel to the automobile will be encouraged in road planning and in the subdivision review process. (RMP, p. 196, #1).

7. Roadway Function:

Local residential streets and highways will be designed to separate commuter trips from the local residential street traffic in order that neighborhood identity may be preserved. (RMP, p. 196, #1)

8. Pathways:

A pedestrian and bike path system will be designed to link residences with activity areas such as schools, shopping areas, recreational facilities and places of worship. Trails that intersect a freeway, arterial or major collector road should be grade-separated with either overpass or underpass facilities at the intersections. (RMP, p. 195, #2; p. 241, #7)

9. Environmental Review:

Roadway improvements will be developed to limit environmental degradation by complying with the provisions included in the impact review process, i.e., environmentally critical and environmentally sensitive land. (RMP, p. 193, #3; p. 196, #2; p. 197, #3)

10. Historic Sites:

Transportation improvements must promote the integrity of the local, designated historic sites in eastern Loudoun. (RMP, p. 228, p. 230)

11. Regional Highway Needs:

A regional approach to highway construction is necessary; cooperation with neighboring jurisdictions and the Council of Governments is crucial to planning for new highways and their capacities. (RMP, p. 196, #3)

12. Off-site Improvements:

All proposed land uses will adequately and safely handle their fair shares of necessary highway improvements and not place undue hardship on existing facilities.

13. Energy Management:

New highway development will promote energy efficiency through the design of energy saving techniques, i.e., express lanes, car pools, transit service and proffered fringe parking lots.

14. Major Facilities:

Routes 7 and 28 have been primarily designated for commuter traffic; access points that limit the capacity of these roads will be discouraged.

15. Secondary Road Improvements:

Necessary secondary road improvements will be incorporated into the annual "Six Year Plan" as approved by the Board of Supervisors.



16. Separation of Land Uses:

Residential and non-residential (*commercial, industrial*) roadways should be separated in traffic function and design.

**EXISTING AND PROJECTED CONDITIONS**

A. Characteristics of Transportation Demand:

Eastern Loudoun County is generally characterized as a fairly low density area with an affluent population. Work places are usually located long distances from the homes of eastern Loudoun and this results in long commuting distances for its people. Only limited commercial facilities exist within the area, but more retail services are planned. Other transportation destinations such as recreation, government services and transit facilities are also located fairly long distances from eastern Loudoun. Without public transit, car pools and the private bus lines are the only transportation alternatives to the automobile. Eastern Loudoun needs new roadway improvements, but also requires improved transit service to limit its reliance on the automobile.

Given the relative affluence of the population and the dispersed destinations of the highway users, a typical household could generate more than the average of ten auto trips per day.<sup>2</sup> This situation, coupled with the rapid increase in residential, commercial and industrial growth, has placed a high demand on existing road facilities and will continue to do so. Commuting and personal trips require sufficient additional highway capacity on all eastern Loudoun roadways.

As the major commuter highway for the County (*Route 7*) continues to become more congested, all of Loudoun County will suffer the resultant adverse effects. Road and highway improvements will be necessary. Existing and future land use and development patterns must promote the highest level of transportation service financially possible in this area.

B. Characteristics of Existing Transportation Facilities:

The eastern Loudoun area encompasses 20 square miles of Loudoun County. The County's total land area is 517 square miles. The area is part of the Regional Metropolitan Washington Transportation System, involving Route 7, the Dulles Airport Access Road (*DAAR*) and the Washington and Old Dominion (*W&OD*) Linear Park (See *Figure 1, page 168*). The proposed Springfield Bypass and Dulles Toll Road will link eastern Loudoun to the metropolitan area with a four-lane divided highway, and will further tie the whole of Loudoun County to the metropolitan region.

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<sup>2</sup>

Institute of Transportation Engineers, "Trip Generation" (Arlington, VA 1976) Section 200.

Figure 1

## Current Regional Expressways 1979



Dulles International Airport is a dominant land use facility in the area. Major expansion is planned for both the terminal and runway facilities in order to accommodate 7.5 million annual passengers by 1985, assuming an 11.3% increase per year.<sup>3</sup> This expansion is expected to stimulate industrial growth along the Route 7 and Route 28 corridors, assuming the economy continues to grow and expand.

The area has as its primary highway commuting facilities, Routes 7 and 28. Route 28 is a controlled access road. The major secondary roads are Routes 606, 625, 637, 846 and 1701. These roads are designed as major residential or industrial collector facilities which feed into the primary highways as shown in Figure 2, page 170.

Primary and secondary roads in eastern Loudoun are experiencing capacity problems with the present high traffic volumes. See Appendix II, page 203 for detailed traffic volume information. Projections for design year 1990 are also included. The traffic capacities of these roads will determine the future level of service to eastern Loudoun residents. Recommendations for improvements to the level of service desired in the Transportation Improvement Program (*TIP*) for Loudoun County will depend heavily upon this analysis and a transportation study of eastern Loudoun undertaken by the Washington Area Council of Governments.

#### C. Traffic Volumes and Transportation Demands:

Route 7 will exceed its design capacity by 1985 if approved development is constructed on schedule. Route 28 is not experiencing severe capacity problems now, but this situation will change by 1985 if the Dulles Airport Toll Road is completed. Route 28 will become the major highway artery for the County by 1990 as Route 606 and the Toll Road increase in importance. Population density will increase north of Route 7 with the Cascades, CountrySide and Pocahontas developments. The Ashburn/Arcola area will also experience population density increases. This will redefine the orientation of traffic destinations. Correspondingly, the secondary roads in eastern Loudoun are experiencing increased traffic volumes (*See Appendix II, page 203*), and will be severely impacted by new development.

Traffic volumes will increase population growth. Population information for eastern Loudoun compiled by the Planning Department and by the Metropolitan Washington Council of Governments (*COG*) indicates that households and population will double for the area by 1990. Traffic generation will also double, as shown in Table 1.

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<sup>3</sup>

(Federal Aviation Administration), "Preliminary Draft Master Plan Report, Dulles International Airport", (February 1977), p. II-5.

Figure 2

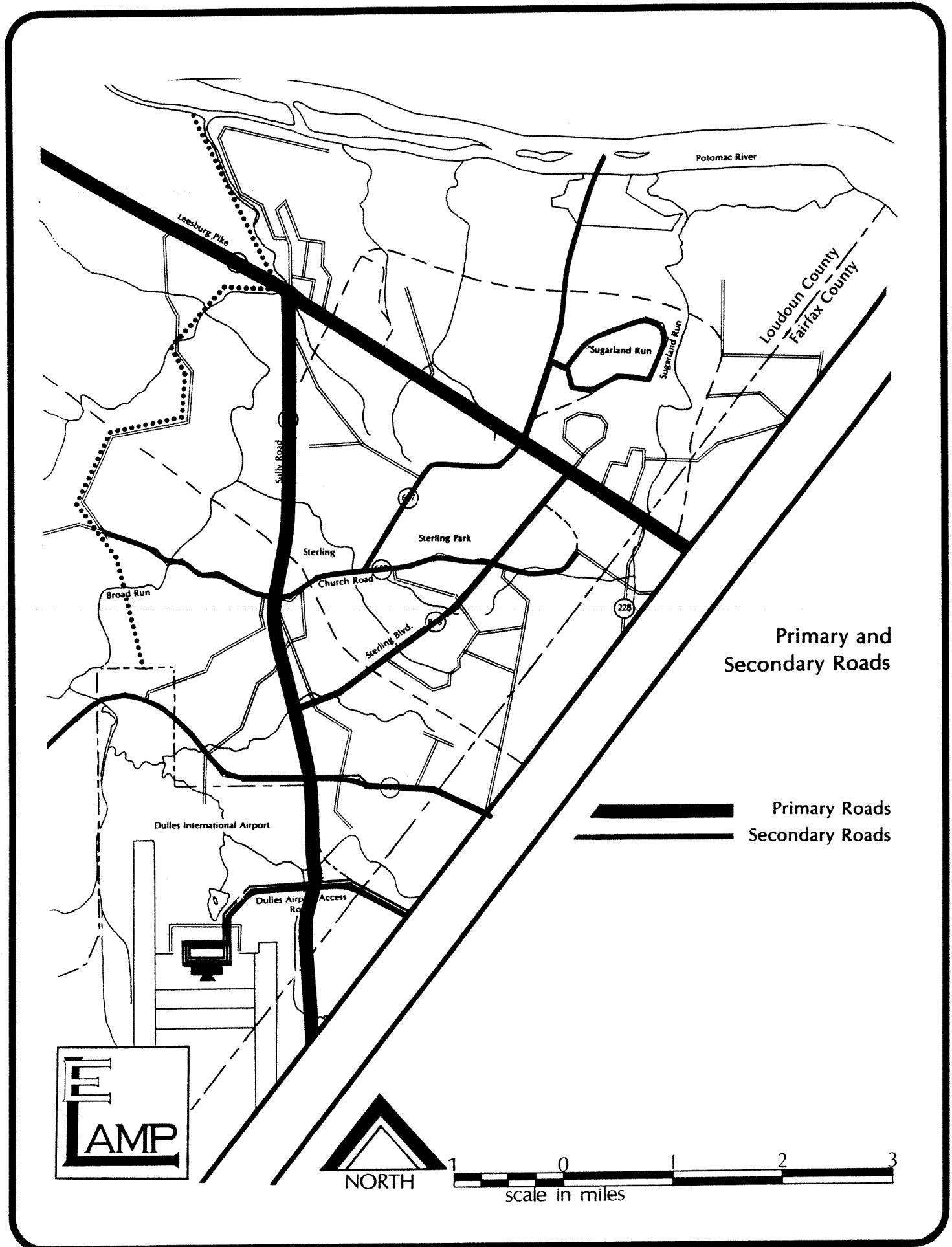


TABLE 1			
TRAFFIC GENERATION - EASTERN LOUDOUN <sup>4</sup>			
Year	Households	Population	Estimated Daily Trips <sup>5</sup>
1979	7,501	27,069	68,347
1985	12,812	46,009	111,233
1990	14,889	52,547	129,197

The impact of all this new development was described and outlined in the recent Council of Governments study, "Impact of Future Land Development on Transportation Facilities and Services"<sup>6</sup>. The study concludes that virtually all major roadways in eastern Loudoun will begin to experience a decrease in level of service by 1985. According to the COG report, an additional 12 new travel lanes will be needed by 1990.<sup>7</sup>

New transportation facilities will be necessary, plus land use and zoning decisions that protect the design capacity for Routes 7 and 28. Route 7 will be impacted most severely. *"It is clear that if Route 7 alone is available to serve these (future) demands, the forecast of 90,000 vehicles per day made in the Resource Management Plan could well be borne out."*<sup>8</sup>

Level of Service (LOS) and capacity relationships are offered in Table 2, page 171. The present level of service for Route 7 is at level C. Level D or E is probable by 1985. Without major improvements or transit options developed, congestion and safety problems will be the common condition of eastern Loudoun roadways.

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<sup>4</sup> Institute of Transportation Engineers, Trip Generation, (Arlington, VA., 1976), Section 200.

<sup>5</sup> Institute of Transportation Engineers, Trip Generation, (Arlington, Va., 1976), Section 200.

<sup>6</sup> The Metropolitan Washington Council of Governments, Transportation Planning Board, "Impact of Future Land Development on Transportation Facilities and Services," Phase I (September 6, 1979), p. 8.

<sup>7</sup> Metropolitan Washington Council of Governments, Appendix II.

<sup>8</sup> *ibid*, p. 9.

<b>TABLE 2</b>			
<b>CRITERIA FOR CAPACITY AND LEVEL OF SERVICE<sup>9</sup></b>			
<b>Type of Facility</b>	<b>Peak Hour Capacity<sup>10</sup></b>	<b>Daily Volumes Capacity</b>	<b>Level of Service</b>
Two Lane	500	8,300	E
Four Lane	1,600	26,600	E
Six Lane	2,600	43,300	E
Four Lane Freeway (tolled)	4,000	66,700	E

Arterial route capacity must be increased on all major routes to accommodate the future growth. The Transportation Improvement Program (*TIP*) of the Transportation Plan suggests the improvements necessary to realize the objective of 12 additional lanes.

**D. Car Pools and Transit Service:**

The arterial road capacity in eastern Loudoun could be increased by bus transit service and car pooling. The Level of Service of commuter facilities is dictated by peak hour capacity. New transit facilities could defer major improvements, but these alternatives are limited in their ridership potential by the diverse destinations of work and convenience trips. The two major destinations for work trips from Loudoun County are Washington, D.C., with an estimated 13% of all commuter trips, and Tyson's Corner-Beltway areas with 12% of all work trips. The remaining 75% of work trips have destinations across the metropolitan area. Daily personal vehicle trips to the core area are estimated at 4%. This pattern of transportation activity, therefore, limits the potential of major transit service to reduce auto trips and new highway capacity requirements.

Presently, public transportation does not serve eastern Loudoun, but a private bus service and carpooling activity are actively supported. The Sterling Commuter Bus, Inc., offers express bus service from the Sugarland Run and Sterling areas for approximately 450 downtown D.C. commuters. Carpooling is actively supported by an estimated 300 or more commuters. Both of these travel modes will be supplemented by the proposed Section 18 Federal Highways Administration (*FHWA*) grant for increased mini-bus service and the promotion of car and van pooling ridership. Fringe lots in both the Dulles Access Road area and along Routes 7 and 846 will be necessary for the continued safe and efficient operation of carpooling and bus activities.

<sup>9</sup> General criteria, other factors include r-o-w, pavement, signalization, etc.

<sup>10</sup> Should dictate capacity.

Future work trips and daily vehicle trips were estimated by the Council of Governments to increase substantially by 1995. Table 3, page 173, describes this situation.

<b>TABLE 3</b>		
<b>PROPORTION OF WORK TRIPS AND DAILY VEHICLE TRIPS IN 1995 FROM SUB-AREAS A AND B TRAVELLING TO THE CORE AND TYSON'S CORNER AREA<sup>11</sup></b>		
	<b>Home Based Work Trips (Number of People)</b>	<b>Total Daily Vehicle Trips (Number of Vehicles)</b>
To the Core (Zones 1-17)	4,200	2,800
To Tyson's Corner and Vicinity	4,000	8,100
To all other Destinations	23,800	75,200
<b>Total 1995 Forecast</b>	<b>32,000</b>	<b>86,100</b>

The major variable in limiting time and distance in the commuter trip to the metropolitan core area will be the ability of Loudoun County residents to use the Dulles Access Road. For purposes of this report, it is assumed that any four-person car pool will be allowed access to this facility. Travel time will be greatly diminished, even with a toll facility, especially with the opening of Route I-66. Metrorail will be available from Vienna and West Falls Church by 1984 with fringe lots to serve commuters. Actual travel times from eastern Loudoun to the core areas will change with the advent of I-66 and opening of the Dulles Access Road.<sup>12</sup> Assuming the construction of these facilities, the estimated bus and car pool potential for 1995 is shown in Tables 4 and 5.

<sup>11</sup> Metropolitan Washington Council of Governments, Transportation Planning Board, "Impact of Future Land Development on Transportation Facilities and Services," Phase I, (Sept. 6, 1979), p. 12.

<sup>12</sup> Metropolitan Washington Council of Governments, Transportation Planning Board, "Impact of Future Land Development on Transportation Facilities and Services", Phase I, (Sept. 6, 1979), page 12.

<b>TABLE 4<sup>13</sup></b>				
<b>1995 ESTIMATED TRANSIT AND CAR POOL POTENTIAL TO REGIONAL CORE<sup>14</sup></b>				
<b>Sub-Areas</b>	<b>Estimated Transit Potential</b>	<b>Estimated Car Pool Potential</b>	<b>Maximum Transit Potential</b>	<b>Maximum Car Pool Potential</b>
B (Sugarland)	27%	17%	35%	32%
D (Sterling)	30%	20%	43%	32%
A (Xerox)	28%	16%	35%	32%
C (Ashburn- Broad Run)	30%	19%	42%	32%

<b>TABLE 5<sup>15</sup></b>				
<b>1995 ESTIMATED TRANSIT AND CAR POOL POTENTIAL TO TYSON'S CORNER AREA<sup>16</sup></b>				
<b>Sub-Areas</b>	<b>Estimated Transit Potential</b>	<b>Estimated Car Pool Potential</b>	<b>Maximum Transit Potential</b>	<b>Maximum Car Pool Potential</b>
B	12%	11%	15%	11%
D	9%	13%	14%	17%
A	13%	10%	15%	11%
C	13%	12%	17%	15%

The characteristics of travel may change in eastern Loudoun, but over the life of this plan, it is assumed that transit and car pooling service will remain a secondary transportation mode to the single passenger automobile. The COG study stated that, *"significant benefits can be expected from transit use and car pooling; everything possible*

<sup>13</sup> See Appendix 4 for time and destinations.

<sup>14</sup> Metropolitan Washington Council of Governments, page 18.

<sup>15</sup> See Appendix 4 for time and destinations.

<sup>16</sup> Metropolitan Washington Council of Governments, page 18.



*should be done to encourage such use.*"<sup>17</sup> It must be demonstrated that alternatives to the automobile are reliable and relatively inexpensive. Factors such as the opening of the Dulles Airport Access Road, fringe parking lots, implementation of the Section 18 grant and cooperation by all participatory parties, both public and private, are mandatory if transit service is to survive and remain viable. With highway capacity requirements increasing dramatically over the next decade in eastern Loudoun, due to increasing travel demand, bus service and car pooling could attract one-quarter of the vehicular trips originating in eastern Loudoun. Transit options will be a necessity in the not too distant future.

E. Pedestrian and Bikeway Access: (See Figure 3, page 176).

Other potentially significant modes of travel are walking and bicycling. If the automobile and public transit can provide transportation for commuting trips and long distance travel, bikeways can provide an alternative choice for that small percentage of residents who want to combine recreation with transportation. Bicycle and pedestrian paths are especially feasible for young people desiring recreation, for the elderly and for households without motorized transportation.

Trails should be designed as important links to shopping areas, employment, community centers, places of worship and recreational locations. An interconnected system of pedestrian trails which combines existing roadways and separate bikeways is an important portion of all new residential subdivisions. This network of trails has been included in the Sugarland Run and Countryside subdivisions. A coordinated network that links all these trails together is proposed in the Recreation and Open Space section of the Area Plan.

F. Growth:

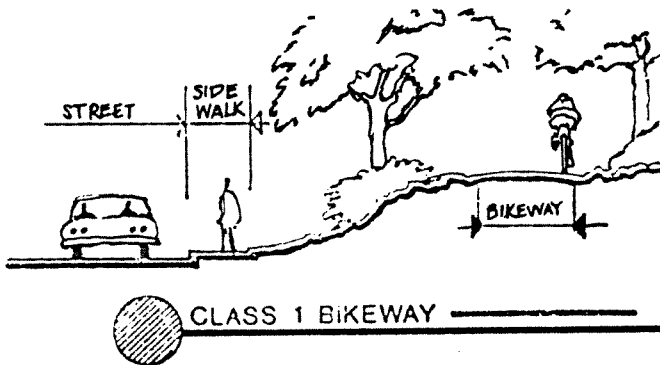
Transportation improvements greatly affect growth. The amount and density of residential development, the size of commercial centers and the expansion of industrial uses is affected by the capacity and location of improvements to the highway system. In eastern Loudoun, although 65% of the land is "built-out" or committed for development, new growth depends on how and when these roads are constructed or improved.

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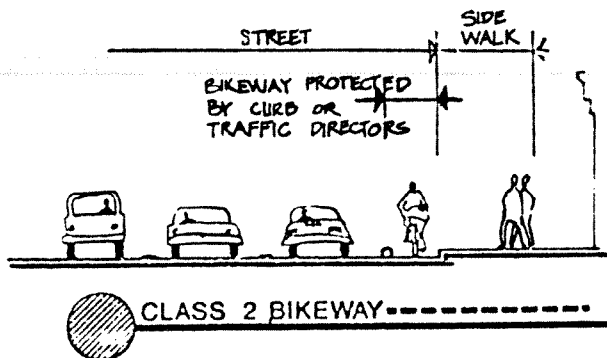
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The Metropolitan Washington Council of Governments, Transportation Planning Board, "Impact of Future Land Development on Transportation Facilities and Services", Phase I, (Sept. 6, 1979), page 19.

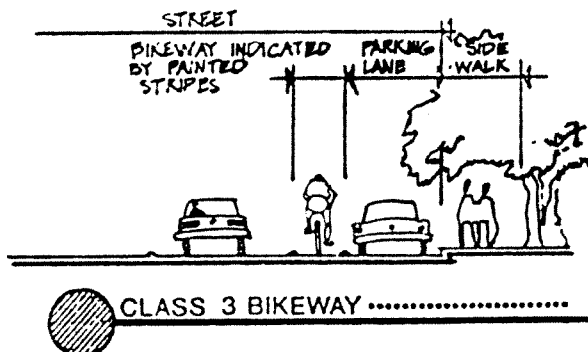
## Bikeway Classifications\*



A completely separated right-of-way designated for the exclusive flow of bicycles. Cross-flow conflicts by pedestrians and automobiles are minimized.



A restricted right-of-way designated for the exclusive flow of bicycles. Through-travel flow by automobiles or pedestrians is not allowed. Cross-flows by pedestrians and automobiles are allowed. The restricted right-of-way for Classification 2 is formed by vertical markers, painted extruded asphalt curbs, or raised pavement.



A combined right-of-way for automobiles and bicycles designated by a continuous dashed stripe line. Generally, this classification has been indicated by signs on vertical posts or stencilled on the pavement at random distances.

\* Urban Bikeway Design Collaborative, Bikeway Design Atlas (Cambridge: MIT w-20-002, 1974).

**TABLE 6****PRIORITY RATING AND HIGHWAY IMPROVEMENT PHASING**

PROJECT	1980	1981	1982	1983	1984	1985	1986+
Top Priority:							
1. Dulles Access Road Improvements Toll Road Construction	XXXXXXXXXXXXXXXXXXXX						
2. Route 7 Improvements	XXXXXXXXXX						
3. Park-and-Ride Lots	XXXXXXXXXX						
4. Route 777	XXXXXXXXXX						
5. Route 625, et. al.	XXXXXXXXXX						
6. Route 604	XXXX						
Intermediate Priorities:							
7. Route 28 Loop	XXXXXXXXXXXXXXXXXXXX						
8. Bridge: Sugarland Run	XXXX						
9. Route 637	XXXXXXXXXX						
10. Route 846	XXXX						
11. Route 775	XXXXXXXXXXXX						
12. South Cottage Road	XXXXXXXXXX						

The growth implications are clear: if Loudoun County is to continue to attract office and industrial use along Routes 7 and 28, plus maintain the high quality and character of residential development and other amenities of suburban living, the transportation network of eastern Loudoun must be improved concurrently with this growth. As industrial and residential growth occurs, necessary public services must follow that development. The policies that follow will serve as guidelines for implementing a system of phased transportation improvements that will meet the future travel demands in eastern Loudoun. The problems of congestion, safety and aesthetics are also addressed, but the emphasis is placed on planning for the extensive future growth expected in eastern Loudoun County.

## **TRANSPORTATION IMPROVEMENT PROGRAM (TIP)**

The transportation recommendations represent short-term implementation priorities plus long-term planning priorities. The proposed Transportation Improvement Program (*TIP*) can be based on these priorities, and will be reviewed separately by the Planning Commission. Appropriate projects will also be included in the 1981-1986 County Capital Improvements Program (*CIP*). Major projects are listed in order of their priority: (See *Figure 4, page 179*).

### **A. Top Priorities:**

1. Dulles Airport Access Road Improvements: increased accessibility to the County should be provided through major road improvements to the DAAR and the Route 28 interchange. The first priority for improvements should be the endorsement and construction of the Toll Road (*parallel lanes*) alongside the present facility. Secondly, ramp access should be provided at the Route 28 interchange for carpools and transit vehicles.
2. Acquisition of Park-and-Ride Lots: the County should promote the installation of park-and-ride facilities for commuters in order to encourage transit use.
3. Route 7: Route 7 in eastern Loudoun should be improved by providing left turn lanes and right turn deceleration lanes where necessary, signalization where necessary, installation of a free-flow lane at Sterling Boulevard, and coordinated signalization to promote traffic flow and proper turning movements.
4. Route 777: this unpaved roadway should be improved to acceptable standards for secondary roads.
5. Public Transit: investigate options for public transit within the major transportation corridors in eastern Loudoun, e.g., Dulles Airport Access Road corridor and Route 7 corridor.
6. Route 625, 604 and East Frederick Drive: improve to four-lane facilities.
7. Route 28: Concurrent with the growth of industry and housing in the eastern area, Route 28, south of Route 7, should be improved to a four-lane, freeway-type facility.

### **B. Intermediate Priorities:**

1. Route 28 Loop: the planned Route 28 loop should be designed and constructed to service the growth north of Route 7 and designed to limit the necessity to use Route 7 for personal or convenience household needs. (*See Figure 5, page 180*).

Figure 4

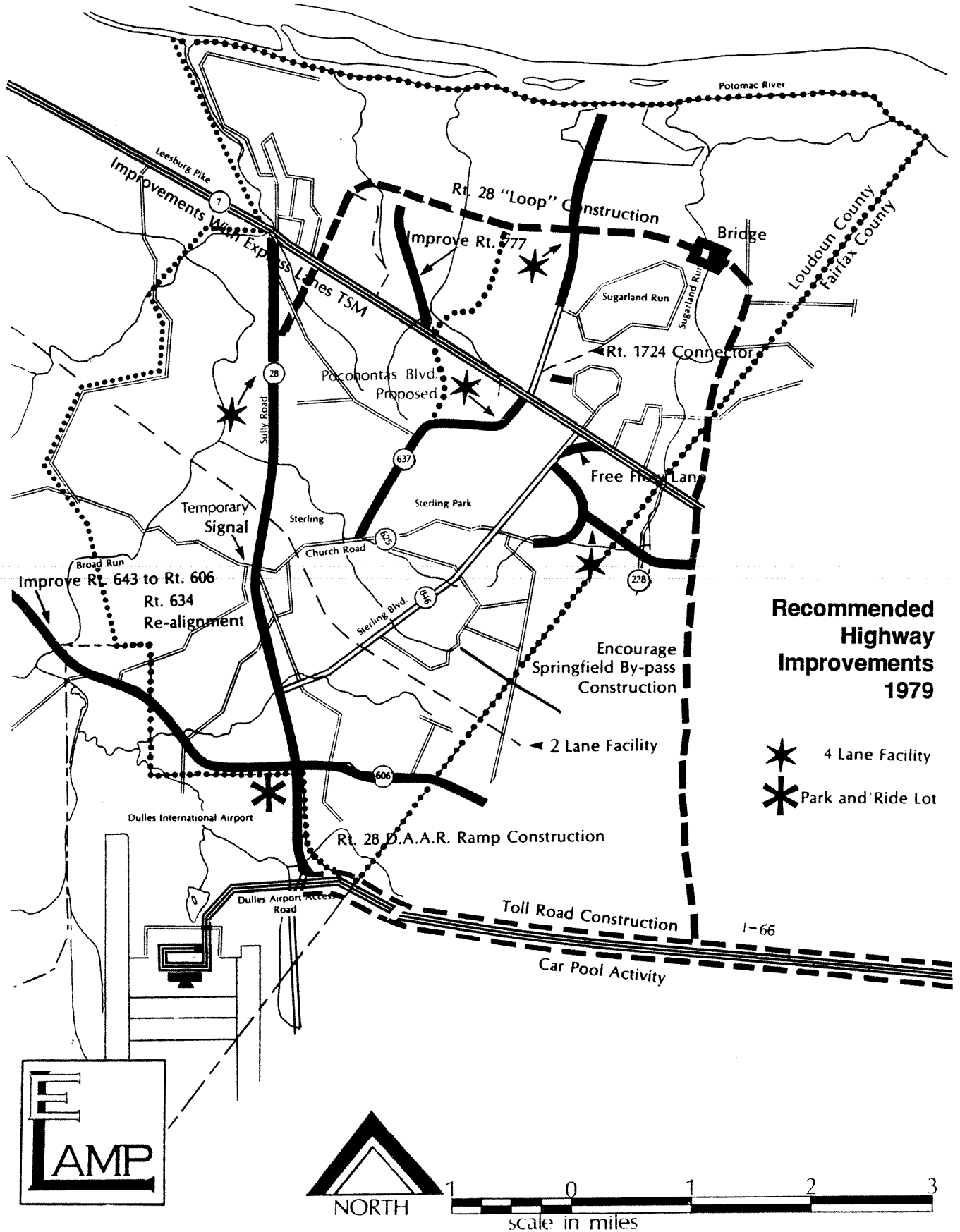
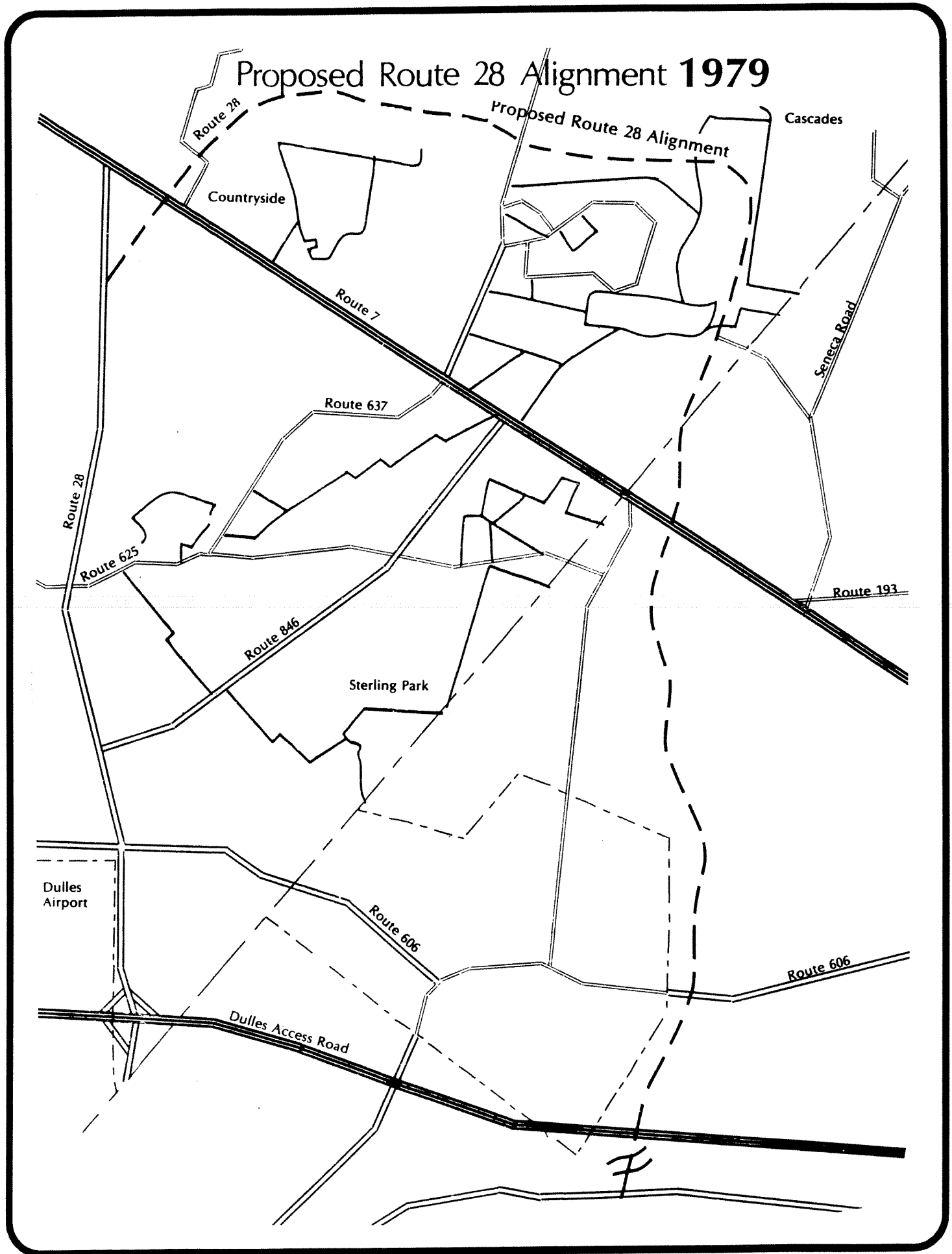


Figure 5



2. Bridge over Sugarland Run: the bridge over Sugarland Run should be designed and constructed as the adjacent properties are developed. Funding alternatives should be explored, specifically a trust fund for VDOT funding.
3. South Cottage Road (*Route 1701*): This road facility should be improved to a four-lane, reverse frontage facility (*U4F*). The right-of-way should correspond to the existing South Cottage section.
4. Route 7: Design of Route 7 will follow the provisions contained in the adopted Route 7 Corridor Study.
5. East-West Highway: the interconnection of Route 606 with 634 and Route 625 with 643 should be designed to provide parallel facilities to Route 7.
6. Springfield Bypass: the design and construction of the Springfield Bypass should interconnect with the Route 28 loop at Route 7 at a point in Fairfax county to be determined by VDOT.
7. Route 28: as the growth of industry and housing in eastern Loudoun increases, Route 28 should be improved to a four-lane controlled access highway south of Route 7. Grade-separated interchanges will be located along the corridor at:
  - a. Routes 7 and 28 (*realigned to east*).
  - b. Between Routes 638 and 625 (*by Broad Run*).
  - c. Route 625.
  - d. Route 846 (*full interchange*).
  - e. Route 606 (*full interchange*).
  - f. W&OD Trail will be a grade-separated crossing.

The roadway will be limited access with service roads interconnecting the interchanges to allow free flow of traffic in the corridor. In order to promote the continued accessibility of the corridor to the industrial users, the following policy will apply:

Accessibility for industrial users along Route 28 will be granted on an interim basis via the existing stub facilities along the highway. These stub roads will be closed as service roads interconnect the interchanges along the roadway.

The Route 7 Corridor Plan was adopted by the Board of Supervisors of the County of Loudoun on October 3, 1988. The Plan is a part of the County's comprehensive plan, amended to the Eastern Loudoun Area Management Plan (ELAMP), the Dulles North Area Management Plan (DNAMP), and the Leesburg Area Management Plan (LAMP).

The Route 7 Corridor Plan has been developed to address future traffic flow management along Route 7 from the Leesburg corporate limits east to the Fairfax County line. With continued development anticipated along this section of Route 7, the Planning Commission has deemed a comprehensive study of this corridor to be necessary for the development of an adequate road network plan more capable of accommodating the resultant traffic generated by new development and the continued growth experienced in the County.

The Route 7 Corridor Plan includes Route 7, proposed north and south parallel collector roads, a series of proposed north-south roads crossing Route 7 by flyover bridging, and north-south major arterial roads intersecting Route 7 at grade separated interchanges. Major roads in this corridor area are proposed to be four or six lanes.

The Plan proposes a limited access condition to Route 7 from Leesburg east to this proposed Algonkian Parkway interchange near the CountrySide subdivision. From the Algonkian Parkway east to the Loudoun/Fairfax County line, the Plan proposes controlled access to Route 7.

The Plan is to be considered a guide for improvements to the Route 7 corridor. The intent is for this Plan to function as a tool, a guide to Loudoun citizens, the land development community and the County government through the decision making process for projects in this corridor area. Subsequent changes to the Plan can be made through the plan amendment process and/or the land development process.

The development of this Plan has been a cooperative effort. Involved in this effort have been the Planning Commission, individual citizens and citizen groups of the County, members of the business community active in the County, the Virginia Department of Transportation and County staff.

Inquiries concerning the Route 7 Corridor Plan can be addressed to the Transportation Division of the Department of Planning (telephone: 777-0246).

**General** (Page numbers below are referring to maps)

Road alignments are subject to refinements until such time as they have been through the subdivision and site plan processes and are ready for construction permit issuance.

The location of interchanges are conceptual in nature and are subject to refinement on the basis of approved record plats, subdivision plans, rezoning and special exceptions.

Page 5: The final Route 7/Route 659 interchange design and location should accommodate the Washington Gas and Light gas line.



Page 6: The location of the Lansdowne/IBM east flyover should be sensitive to the Belmont Plantation and adjacent development and could be moved as long as it meets VDOT requirements.

Page 7: Potomac Farms:

- The north parallel road will be realigned to the north to lessen its impact on existing homes. This alignment may encroach on the floodplain and would need to be sensitive to floodplain requirements.
- A grade separated point of access that crosses the north parallel road will be provided to maintain access to the Potomac River. This access shall accommodate emergency vehicles.
- A second point of access that minimizes the attraction of through traffic will be identified.

Page 9: The Route 28 west parallel road needs to connect to the Route 7 south parallel road. The crossing of Broad Run needs to be at the best engineering location which is to be determined by VDOT.

Prior to the Phase II Route 7/Route 28 interchange construction which eliminates direct access to the Broad Run Farms community, the location of a second point of access to the community must be identified.

Page 10: The design of the Algonkian Parkway interchange is to be reexamined in an effort to eliminate signalization.

Page 13: For the north service road, alignment adjustments and buffering should be used at the site plan stage to minimize impacts on residential areas and the lake.

**Figure 6 a**

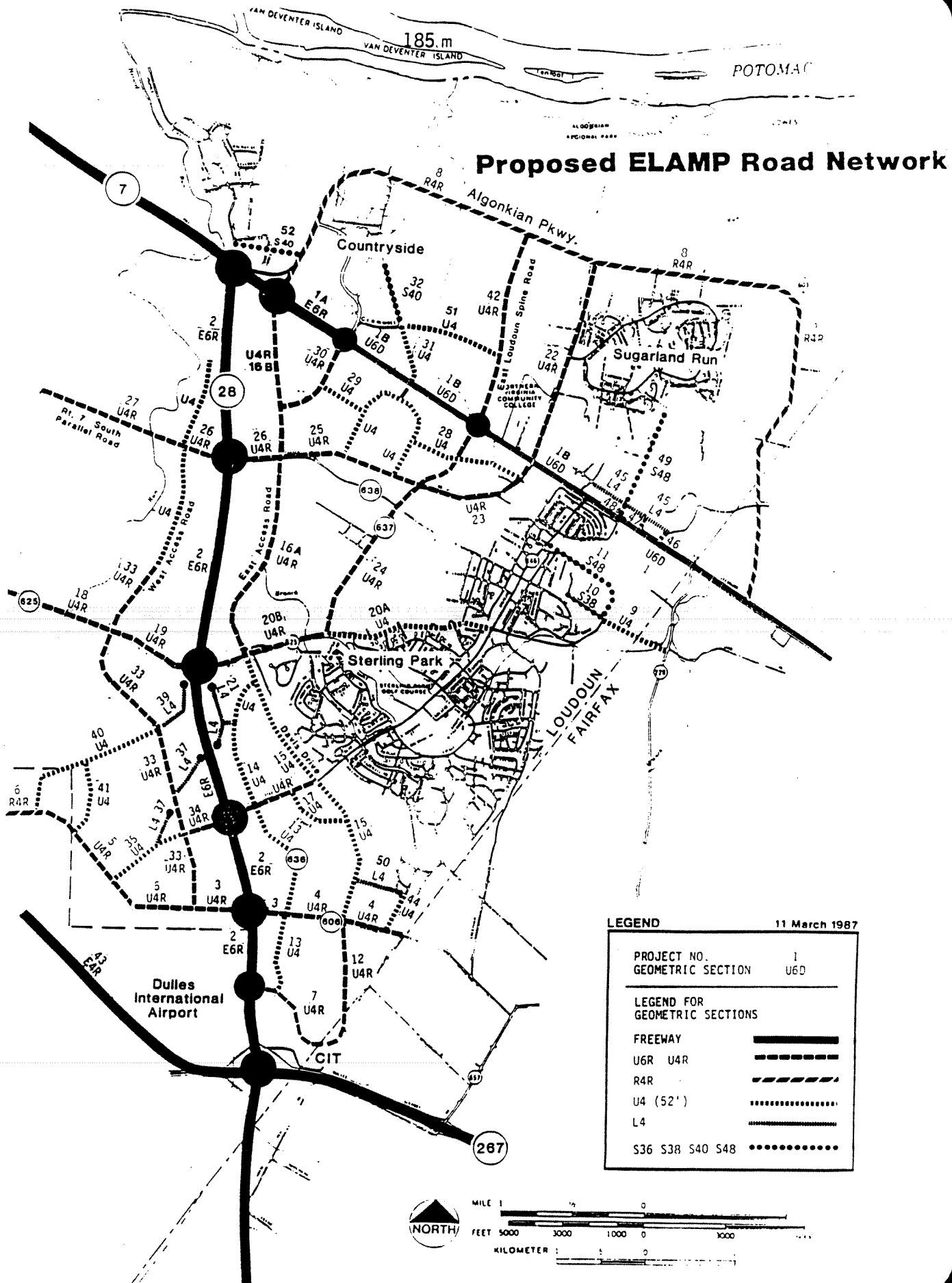
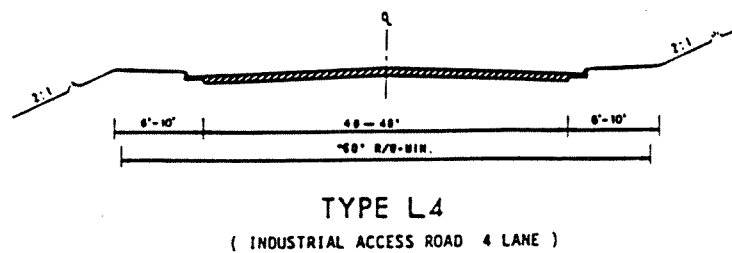
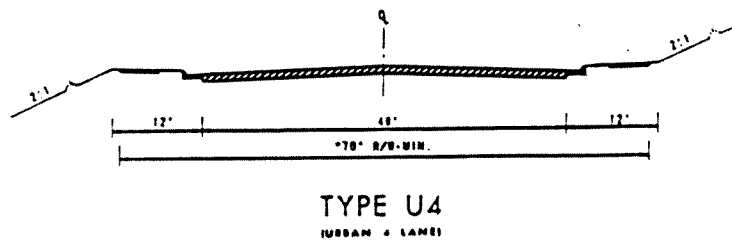
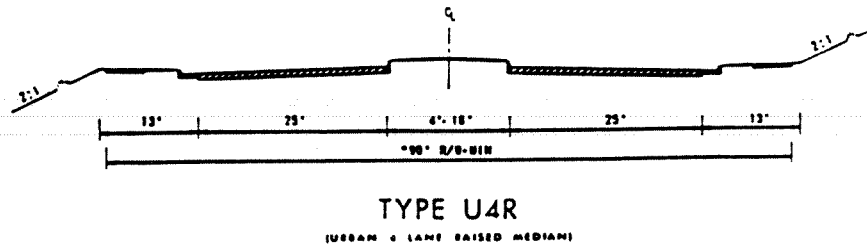
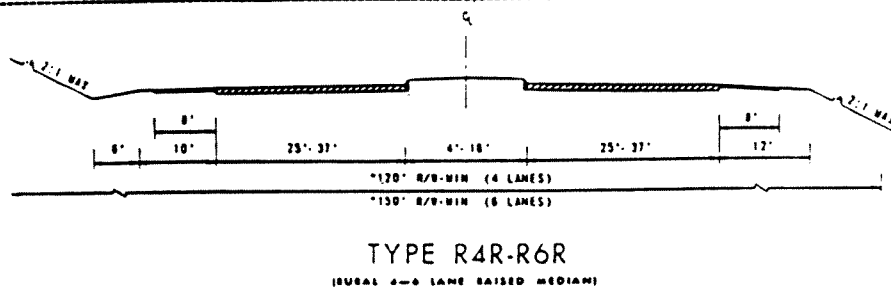
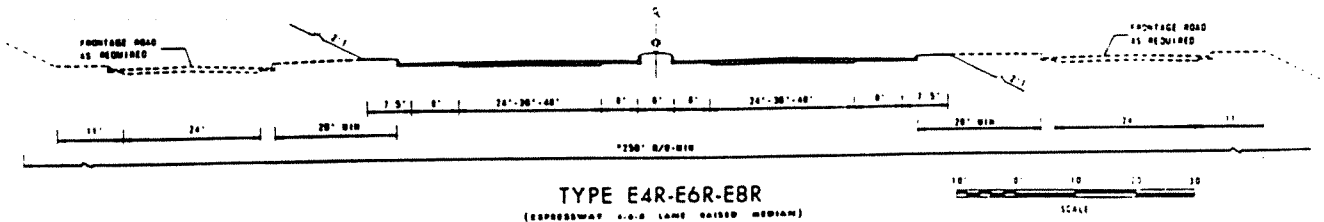


Figure 6 b

# TYPICAL SECTIONS



PROVISION OF SIDEWALK CONSIDERED ON A CASE BY CASE BASIS

C O U N T Y   O F   L O U D O U N

C. Other Highway Improvements - No Priority Given:

1. TIP: The County should initiate and implement a planning tool, updated annually, called the Transportation Improvement Program (*TIP*) for both primary and secondary road improvements.
2. Road Classification System: the County should collaborate with VDOT on the classification and design specifications for the arterials, collectors and local residential streets in eastern Loudoun.
3. Street Design: residential subdivisions of R-2 or greater density should be designed for an urban cross-section. All non-residential development will require urban cross-section design, unless specifically waived by the County for particular environmental or traffic management reasons. Bus turnarounds and drop off locations are to be included in the road design.
4. Land Dedication: interchanges will be designated at various points along Routes 7 and 28. Developers should be encouraged to proffer the dedication or reservation of such interchange sites.
5. Controlled Access Easements: easements should be purchased if necessary, or obtained during the development approval process as travel demands increase on all major highway facilities in order to control the number of access points.
6. Route 637: Route 637 should be upgraded with controlled access points and four lane improvements.
7. Route 846 (*Sterling Boulevard*): signals and improvements are necessary at major intersections: i.e., Route 625 (*Church Road*) and Route 1401 (*Greenhorn Avenue*).
8. Route 28: signalization installed at intersection of Routes 28 and 625.
9. Route 634: Re-align intersection with Route 625, 1,000 feet from Route 28.
10. South Fillmore Drive: Eventually improve to a two-lane connector road from East Maple Drive to county line to serve as a reverse frontage road facility to carry through traffic from Crestview Drive in Fairfax County to Sterling without residential traffic conflict. The right-of-way has been dedicated to the State and should be developed only when residential conflicts are apparent.

**IMPLEMENTATION**

The recommendations will require ordinance changes, legislative review, priority ranking and procedural changes. This section will propose the changes necessary to implement the recommendations.

1. Transportation Improvements Program (TIP): The function of highway implementation has traditionally been the responsibility of the Virginia Department of Transportation (VDOT). Primary road improvements are planned for construction through the ten year plan; the secondary road improvements are planned through the six year plan. The TIP, as suggested by this plan, should function as the annual updating vehicle for all County road improvements and should be a separate portion of the five-year county Capital Improvements Program (CIP). The TIP should be drafted in cooperation with VDOT and written as the adopted County priority ranking for road budgeting and construction.
2. COG Studies: The Council of Governments transportation planning policies and programs should be incorporated into the transportation program for eastern Loudoun.
3. Resource Management Plan: The adopted RMP will require a five year update as mandated by the State. The Area Plan's recommendations for improvements should be included in this updating procedure.
4. Zoning and Environmental Review: The County will implement the policies of design and control of new roadway improvements in eastern Loudoun in the zoning and environmental procedures associated with zoning and subdivision site plan processing.
5. Controlled Access Roadways: Routes 7 and 28 should require access easements, either bought or proffered to the County to control the number of future access points.
6. Route 28 and DAAR Interchange: This project should be implemented through funds from either the bond issue for the toll road or the uncommitted demonstration funds from the original DAAR Transit Study. No county funds should be expended.
7. Park-and-Ride Lots: Land and improvements should be procured from local developers as proffers, and from local businesses or through federal grant-in-aid projects. (See Figure 4, page 179 for locations.)
8. Public Transit: Investigate options for public transit within the major transportation corridors of eastern Loudoun, e.g., Dulles Access Road corridor and Route 7 corridor.
9. Proffer Items: New residential and non-residential development should include voluntarily proffered items as conditions for zoning approval. Suggestions for acceptable proffers include:
  - a. Pedestrian trails to centers of community activity and pedestrian underpasses for safe access to local schools, properties and community centers.

- b. On-site transportation improvements, i.e., four-lane cross section design for large subdivisions.
  - c. Off-site transportation improvements, i.e., signalization and safety improvements, deceleration and acceleration lanes directly required by the development.
  - d. Noise abatement measures, i.e., berms, planting, screens between large collector roads and residences as the needs are determined by the County.
  - e. Funds for highway improvements, specifically the Sugarland Bridge.
- 10. Subdivision Transition Areas: New residential subdivisions shall include completed roadways that interconnect neighboring property with the new subdivision. Stub roads will be dedicated if adjacent property is vacant.
- 11. Road Design: Bus drop-off facilities should be incorporated in the non-residential developments and the residential subdivisions with added rights-of-way dedication for bus usage.
- 12. Interchange: All major intersections, either planned for construction or designated by the County, will be rezoned to PD-IC (*Planned District-Interchange*) and development criteria will accompany these rezoning proposals.
- 13. Bridge Construction: Federal and state agencies should be tapped for priority designation and funding for the Sugarland Run bridge construction.
- 14. Highway Construction Fund: An eastern Loudoun Highway Improvement Fund should be established. Each local development will contribute its fair share of monies for designated future projects that are necessary for the local area.
- 15. Right-of-way Dedication: Local land developers will be encouraged to dedicate land that will eventually be used to upgrade roadways. Highway dedication will be designated by VDOT and the County.
- 16. W&OD and Route 28: The W&OD intersection with Route 28 (*a freeway facility*) should be grade-separated to allow continuity of the trail.
- 17. Elderly/Handicapped Accessibility: Federal grants to provide access for the elderly and handicapped in eastern Loudoun should be pursued by Loudoun County.
- 18. Transit Shelters: Bus shelters for school children and transit patrons will be constructed at designated locations to promote transit use. Local JCs, Ruritan Clubs and community associations or other civic associations can be approached for funding.

19. Interchange Developments: Land development in the vicinity of a highway interchange will be specially zoned to limit traffic congestion and premature over-development. Land use and access points will be controlled.
20. Corridor or Transportation Studies: The relevant corridor and transportation studies, once adopted, should be incorporated into the Eastern Loudoun Area Management Plan with specific recommendations.
21. Noise Attenuation: The major transportation roadways (*major collectors, arterials and freeways*) should incorporate noise attenuation techniques that will buffer the adjacent land uses. Residential property will require extensive berm-type noise attenuation.

### **CONCLUSION:**

The ease of movement of people in eastern Loudoun is the single most important improvement the public and private sector can provide for the residents of the area. To that end, constant review and reevaluation of the various means to move people effectively, plus road improvements offered by private developers (*buses, bikeways or road improvements*) will be closely monitored by the County and VDOT.

**ELAMP AMENDMENT 86-08**  
(Adopted by Board of Supervisors March 16, 1987)

<b>TRANSPORTATION APPENDIX I</b>			
<b>ROADWAY DESIGN IMPROVEMENTS</b>			
<b>Roadway</b>	<b>Location</b>	<b>Lanes Right-of-Way</b>	<b>Description</b>
1A. Route 7	Route 28 - CountrySide Blvd.	6 lanes - divided 200' ROW plus land dedication.	Freeway. E6R Limited Access. All at-grade access will be terminated when road becomes a freeway. Diamond interchange at Rt. 7 and CountrySide Blvd. 60 mph. design speed.
1B. Route 7	CountrySide Blvd. - Fairfax County Line	6 lanes - divided 200' ROW, plus land dedication required for East Loudoun Spine Road interchange ramps.	U6D. Controlled access median divided major urban arterial. Left and right turn lanes required at all intersections. Decel lanes required at entrances. 50 mph design speed 900' desirable distance between median breaks.
2. Route 28	Fairfax County Line to Route 7	6 lanes - divided 200' ROW, plus land dedication required for interchange ramps at all proposed interchange locations.	<p>Freeway. E6R Limited Access. All at-grade access will be terminated when road becomes a freeway. Any short-term temporary access limited to existing intersections and stub roads. 60 mph design speed.</p> <p>Phased Improvement Program may include 4 and/or 6 lane major arterial sections. Left and right turn lanes required at all intersections/ entrances during arterial phases of Route 28 improvements. All arterial improvements must be consistent with ultimate freeway design sections.</p>



## TRANSPORTATION APPENDIX I

### ROADWAY DESIGN IMPROVEMENTS

Roadway	Location	Lanes Right-of-Way	Description
3. Route 606 Old Ox Rd.	West Access Road to Route 636 Shaw Rd. (East Access Rd.)	4 lanes - divided 120' - 160' ROW plus land required for Route 28 interchange ramps.	U4R. Limited access median divided, major urban collector. Section to become part of Rt. 28/Rt. 606 interchange. Left and right turn lanes required at Rt. 636 and West Blvd. intersections. 50 mph design speed.
4. Route 606 Old Ox Rd.	Shaw Rd. (East Access Rd.) to Fairfax County Line.	4 lanes - divided 120' ROW.	U4R. Controlled access median divided, major urban collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. 800' desirable distance between median breaks. 45 mph design speed.
5. Route 606 Old Ox Rd.	West Access Rd. to Rt. 634	4 lanes - divided 120' ROW	U4R. Controlled access median divided, major urban collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. 900' desirable distance between median breaks. 50 mph design speed.
6. Route 606 Old Ox Rd.	Rt. 634 to Rt. 50	4 lanes - divided 120' ROW	R4R. Controlled access median divided, rural collector left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. 900' desirable distance between median breaks. 50 mph design speed.
7. CIT Spine Road	Rt. 28 to Center for Innovative Technology	4 lanes - divided 120' ROW plus land dedication required for Rt. 28 interchange	U4R. Median divided minor urban collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. Desirable distance between median breaks 700'. 40 mph design speed. To be expanded to 6 lanes if required by build-out densities in CIT area.

## TRANSPORTATION APPENDIX I

### ROADWAY DESIGN IMPROVEMENTS

Roadway	Location	Lanes Right-of-Way	Description
8. Algonkian Parkway	Route 7 (at Holly Knolls Dr.) to Route 7 (Rt. 28/East Access Road)	4 lanes - divided 120' ROW	R4R. Controlled access median divided, major urban collector. Left and right turn lanes required at major intersections. Desirable distance between median breaks 700'. 40 mph design speed.
9. Route 604 Sugarland Road	Route 625 to Fairfax County Line	4 lanes - undivided 60' ROW	U4. Minor Urban Collector. 52' curb face-curb face. 40 mph design speed.
10. Route 604 Sugarland Rd.	Route 625 to Dead End	2 moving traffic lanes 1 side on-street parking 50' ROW	S38. Subdivision Road. 38' curb face-curb face. 35 mph design speed.
11. E. Frederick Drive	Route 846 to Route 604	4 lanes - divided 120' ROW	S48. Subdivision Collector. 48' curb face to curb face. 40 mph design speed.
12. CIT Loop Road	Route 606/Davis Drive Extended. CIT Spine Road	4 lanes - divided 120' ROW	U4R. Median divided urban minor collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. Desirable distance between median breaks 700'. 40 mph design speed. To be expanded to 6 lanes if required by build-out densities in the CIT area.
13. Route 636/Shaw Road/E. Access Rd.	CIT Spine Road to 0.3 miles north of Route 846	4 lanes - undivided 70' ROW (except) 90' ROW within 225' of major intersections.	U4. Urban Minor Collector. 52' curb face-curb face. Left and right turn lanes required at all major intersections. 40 mph design speed.

## TRANSPORTATION APPENDIX I

### ROADWAY DESIGN IMPROVEMENTS

Roadway	Location	Lanes Right-of-Way	Description
14. East Access Rd. (New Road)	0.3 miles north of Route 846 to Davis Drive Extended	4 lanes - undivided 70' ROW (except) 90' ROW within 225' of major intersections.	U4. Urban Minor Collector. 52' curb face-curb face. Left and right turn lanes required at all major intersections. 40 mph design speed.
15. Davis Drive (Part of East Access Rd. System)	Route 606 to Route 625	4 lanes - undivided 70' ROW (except) 90' ROW within 225' of major intersections.	U4. Urban Minor Collector. 52' curb face-curb face. Left and right turn lanes required at all major intersections. 40 mph design speed.
16A. East Access Rd.	Route 625 to Route 7 South Parallel Road/Route 638 relocated.	4 lanes - divided 90' ROW.	U4R. Urban Minor Collector. Left turn lanes required at all intersection and median breaks. Desirable distance between median breaks 700'. 40 mph design speed.
16B. East Access Rd.	Route 7 South Parallel Road to Route 7/Algonkian Parkway	4 lanes - divided 120' ROW	U4R median divided urban minor collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. Desirable distance between median breaks 800'. 45 mph design speed.
17. Glenn Drive	Route 846 to Davis Drive	4 lanes 60' ROW	U4. Industrial Local Access Road. 52' curb face-curb-face. 35 mph design speed.
18. Route 625 Waxpool Road	1,200' west of gore point for Route 28 westside interchange ramps to Rt. 607	4 lanes - divided 120' ROW	U4R. Controlled access median divided major urban collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. 900' desirable distance between median breaks. 50 mph design speed.

## TRANSPORTATION APPENDIX I

### ROADWAY DESIGN IMPROVEMENTS

Roadway	Location	Lanes Right-of-Way	Description
19. Route 625 Waxpool Rd./Church Road	1,200' west of gore point for Route 28 westside interchange ramps to East Access Road	4 lanes - divided 120' - 160' ROW, plus land required for Route 28 interchange ramps.	U4R. Limited access median divided major urban collector. Section to become part of Rt. 28/Rt. 625 interchange. Left and right turn lanes required at East and West Access Road intersections. 50 mph design speed.
20A. Route 625 Church Road	Route 637 to Route 846	4 lanes - undivided 70' ROW (except) 90' ROW within 225' of major intersections.	U4. Urban Minor Collector. 52' curb face-curb face. Left and right turn lanes required at all major intersections. 40 mph design speed.
20B. Route 625 Church Road	Route 637 - East Access Road	4 lanes - divided 100' ROW	U4R. Controlled access median divided major urban collector. Left and right turn lanes required at all intersection. Decel/right turn lanes required at all entrances. 700' desirable distance between median breaks. 40 mph design speed.
21. Route 636 Shaw Rd.	East Access Road to cul-de-sacs south of Route 625 and east of Route 28.	4 lanes - undivided 60' ROW	L4. Industrial Local Access Road. 44' curb face-curb face. 35 mph design speed.
22. Route 637 Potomac View Road	Rt. 7 to Algonkian Parkway	4 lanes - divided 110' ROW	U4R. Controlled access median divided major urban collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. 800' desirable distance between median breaks. 45 mph design speed.

## TRANSPORTATION APPENDIX I

### ROADWAY DESIGN IMPROVEMENTS

Roadway	Location	Lanes Right-of-Way	Description
23. Route 637 Sterling Road	Rt. 7 to Rt. 7 South Parallel Road/East Loudoun Spine Road	4 lanes - divided 110' ROW	U4R. Controlled access median divided major urban collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. 700' desirable distance between median breaks. 40 mph design speed.
24. Route 637 Sterling Road	Rt. 7 South Parallel Road/East Loudoun Spine Road to Route 625.	4 lanes - divided 120' ROW.	U4R. Controlled access median divided major urban collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. 700' desirable distance between median breaks. 40 mph design speed.
25. Route 7 South Parallel Rd. (Route 638 Corridor Rd.)	Route 637 to Route 28 East Access Road	4 lanes - divided 110' ROW	U4R. Controlled access median divided major urban collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. 800' desirable distance between median breaks. 45 mph design speed.
26. Route 7 South Parallel Rd. (Route 638 Corridor Road)	Route 28 East Access Road to Route 28 West Access Road	4 lanes - divided 120' - 160' ROW, plus land required for Route 28 interchange ramps	U4R. Limited access median divided major urban collector. Section to become part of Rt. 28/Rt. 638 Corridor Road interchange. 50 mph design speed.

## TRANSPORTATION APPENDIX I

### ROADWAY DESIGN IMPROVEMENTS

Roadway	Location	Lanes Right-of-Way	Description
27. Route 7 South Parallel Rd. (Route 638 Corridor Road Extended)	Route 28 West Access Road to Route 607	4 lanes - divided 110' ROW	U4R. Controlled access median divided major urban collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. 800' desirable distance between median breaks. 45 mph design speed.
28. Route 7 South Access Rd.	Route 637 to Ridgetop Road	4 lanes - undivided 70' ROW	U4. Minor Urban Collector. 52' curb face to curb face. 40 mph design speed.
29. Route 7 South Access Rd.	Ridgetop Road to CountrySide Blvd. extended.	4 lanes - undivided 70' ROW	U4. Minor Urban Collector. 52' curb face to curb face. 40 mph design speed.
30. CountrySide Blvd. Extended	Route 7 to East Access Road	4 lanes - divided 120' ROW	U4R. Controlled access median divided urban major collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. 700' desirable distance between median breaks. 40 mph design speed. Diamond interchange at Route 7.
31. Rt. 777 Tripleseven	Route 7 to Cromwell Rd. (Extended)	4 lanes - undivided 70' ROW	U4. Minor Urban Collector. 52' curb face to curb face. 40 mph design speed.
32. Rt. 777 Tripleseven	North of Cromwell Road	Subdivision traffic lanes 60' ROW	S40, Subdivision Road. 40' curb face-curb face. 35 mph design speed.

## TRANSPORTATION APPENDIX I

### ROADWAY DESIGN IMPROVEMENTS

Roadway	Location	Lanes Right-of-Way	Description
33A. West Access Road (New Road)	Route 606 to transition point north of W&OD ROW	4 lanes - divided 110' ROW	U4R. Median divided major urban collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. Desirable distance between median breaks 700'. 40 mph design speed.
33B. West Access Road (New Road)	South of Route 7 to transition point north of W&OD ROW	4 lanes - undivided 70' ROW	U4. Urban Minor Collector. 52' curb face to curb face. 40 mph design speed.
34. Route 846 Sterling Boulevard	Route 28 East Access Road to Route 28 West Access Road	4 lanes - divided 120' - 160' ROW, plus land required for Route 28 interchange ramps.	U4R. Limited access median divided major collector. Section to become part of Rt. 28/Route 846 interchange. Segment west of Route 28 new road. 50 mph design speed.
35. Route 846 Sterling Blvd. (extended)	Route 28 West Access Road to Route 775	4 lanes - undivided 70' ROW (except) 90' ROW within 225' of major intersections.	U4. Urban Minor Collector 52' curb face-curb face. Left and right turn lanes required at all major intersections. 40 mph design speed.
36. Route 775 Sterling Road	Route 846 extended to Route 606	4 lanes - undivided 70' ROW (except) 90' ROW within 225' of major intersections.	U4. Urban Minor Collector. 52' curb face-curb face left and right turn lanes required at all major intersections. 40 mph design speed.
37. Route 775 Sterling Road	Route 846 extended to cul-de-sac west of Route 28	4 lanes - undivided 60' ROW	L4. Industrial Local Access Road. 44' curb face-curb face. 35 mph design speed.

## TRANSPORTATION APPENDIX I

### ROADWAY DESIGN IMPROVEMENTS

Roadway	Location	Lanes Right-of-Way	Description
38. Route 775 Sterling Road	Route 28 East Access Road to cul-de-sac east of Route 28	4 lanes - undivided 60' ROW	L4. Industrial Local Access Road. 44' curb face-curb face. 35 mph design speed.
39. Route 634 Moran Road	Route 28 West Access Rd. to cul-de-sac west of Route 28	4 lanes - undivided 60' ROW	L4. Industrial Local Access Road. 44' curb face-curb face. 35 mph design speed.
40. Route 634 Moran Road	Route 28 West Access Rd. to Route 789	4 lanes - undivided 70' ROW (except) 90' ROW within 225' of major intersections.	U4. Urban Minor Collector. 52' curb face-curb face. Left and right turn lanes required at all major intersections. 40 mph design speed.
41. Route 634/606 Connector Road (New Road)	Route 634 to Route 606	4 lanes - undivided 70' ROW	U4. Industrial Local Access Road. 52' curb face-curb face. 40 mph design speed.
42. East Loudoun Spine Road (New Road)	Algonkian Parkway to Route 637	4 lanes - divided 120' ROW plus land required for interchange at Route 7.	U4R. Controlled access median divided urban major collector. Left and right turn lanes required at all intersections. Decel/right turn lanes required at all entrances. 800' desirable distance between median breaks. 45 mph design speed.



## TRANSPORTATION APPENDIX I

### ROADWAY DESIGN IMPROVEMENTS

Roadway	Location	Lanes Right-of-Way	Description
43. Route 267 Extended	Dulles Toll Road to Route 606 (continues on to Route 643 DNAMP Corridor)	4 lanes - ROW to be determined. (estimated 160' - 200')	Freeway. E4R. Limited Access. Alignment across Dulles Airport land and location of interchange with Rt. 606 to be determined. Check with County for most recent details. 60 mph design speed.
44. Route 824 Oak Grove Road	Route 606 to Trefoil Lane	4 lanes - undivided 60' ROW	U4. Industrial Local Access Road. 52' curb face-curb face. 35 mph design speed.
45. Route 7 North Access Road (New Road)	Lakeland Drive to Richland Drive	4 lanes - undivided 60' ROW	L4. Local Access Road. 44' curb face-curb face. Buffer required on north side of road to protect residential area. 35 mph design speed.
46. Lakeland Drive	Route 7 to Route 7 North Access	4 lanes - undivided 60' ROW	U4. Minor Urban Collector. 52' curb face-curb face. 40 mph design speed.
47. Cedar Drive	Route 7 to Route 7 North Access Road	4 lanes - undivided 60' ROW	U4. Minor Urban Collector. 52' curb face-curb face. 40 mph design speed.
48. Richland Lane (New Road)	Route 7 to Route 7 North Access	4 lanes - undivided 60' ROW	U4. Minor Urban Collector. 52' curb face-curb face. 40 mph design speed.
49. Richland Lane (New Road)	North of Rt. 7 North Access Road	4 lanes - undivided 60' ROW	S48. Subdivision Collector. 48' curb face-curb face. 40 mph design speed.
50. Trefoil Lane (New Road)	Oak Grove Rd. - Davis Drive Extended	4 lanes - undivided 60' ROW	L4. Industrial Local Access Road 44' curb face-curb face. 35 mph design speed.

**TRANSPORTATION APPENDIX I****ROADWAY DESIGN IMPROVEMENTS**

Roadway		Location	Lanes Right-of-Way	Description
51.	Route 7 North Parallel Rd.	Route 777 East Loudoun Spine Road	4 lanes - undivided 70' ROW (except) 90' ROW within 225' of major intersections	U4. Urban Minor Collector. 52' curb face-curb face. Left and right turn lanes required at all major intersections. 40 mph design speed.
52.	Route 7 North Broad Run Farms Access Road	From Route 808 East (N. Boundary, church property) to Algonkian Parkway	Subdivision traffic lanes 60' ROW	S40, Subdivision Road. 40' curb face-curb face. 35 mph design speed.

## DEFINITION OF TERMS USED IN ELAMP APPENDIX 1

Each road in Appendix 1 of the Eastern Loudoun Area Management Plan (ELAMP) is defined in terms of its:

1. Location
2. Number of lanes, right-of-way width
3. Road description parameters, including:
  - Typical section
  - Access format
  - Functional classification
  - Turn lane requirements
  - Design speed

When used in conjunction with all applicable Virginia Department of Transportation (VDOT) standards, this Appendix allows the design of road improvements in conjunction with development projects which are consistent with the requirements of the County's Comprehensive Plan and VDOT standards.

The following will assist the reader in understanding the terms used in this Appendix:

Location. Location specifies the termini (*i.e., end points*) of each road section. Approximate alignments of the road improvements are shown on Map A-1, Eastern Loudoun County Road Improvements. Please Note: These are approximate alignments. Please contact the Loudoun County Planning Department with regard to functional design plans or construction plans and profiles which may be available for a specific section, and which specify detailed alignments.

Lanes/Right-of-Way. The number of through traffic lanes are indicated in this column; *i.e.*, 2, 4 or 6 lanes. A 4-lane road has two through lanes in each direction; a 6-lane road has three through lanes in each direction. A divided road has its directional through lanes separated by a median (*central reserve of land*). Median divided roads are capable of servicing higher volumes of traffic at acceptable levels of service than undivided (*no median*) roads. Where higher volumes of left turns are expected, median crossovers provide for safer and more efficient traffic operations because left turn lanes can be constructed in the median area which separates left turn traffic from through traffic. However, medians are generally not effective on roads with frequent access points (*entrances, driveways, etc.*) since substantial volumes of U-turns can accumulate at median crossovers.

Right-of-way refers to the total width of land which must be provided to the public sector for the construction and maintenance of a road section. Right-of-way widths generally vary from 50 feet - 60 feet for a 2-lane local road to 60 feet - 70 feet for a 4-lane undivided road to 110 feet - 120 feet for a 4-lane median divided road to 200 feet or more for a freeway. In cases where turn lanes are required at intersections or entrances additional right-of-way may be required.

## Description

Typical Section. This refers to the characteristics of a road's cross section including number and width of lanes, curbs/gutters or shoulders and medians. Typical sections are generally divided into urban and rural types. Urban types normally have sidewalks, curbs and gutters and the various design components are designed to meet narrower right-of-way requirements. In the following typology of roads, urban sections are designated by the first letter U. Rural types are characterized by road shoulders and drainage ditches and are designated by the first letter R. The number following the first letter refers to the number of lanes. If a letter follows the lanes number this indicates the road has a median. An R indicates a raised median (*curb*) and a D indicates a depressed median (*such as currently exists on Route 7*). Typical sections used in Appendix A include:

- E6R: A limited access freeway with three lanes in each direction and a raised median.
- U4R: A 4-lane divided road with curb and gutter and a raised median. The pavement width of each 2-lane directional section will generally be 25 feet. Sidewalks should be provided in areas where substantial pedestrian movements are anticipated.
- R4R: A 4-lane divided road with shoulders and drainage ditches and a raised median.
- U4: A 4-lane undivided road with curb and gutter. Forty-eight feet of pavement is generally required with two 2-foot gutters for a total curb face-curb face width of 52 feet.
- L4: Similar to a U4 section but with narrower pavement widths. Curb face-curb face widths of 40 feet-48 feet depending on project traffic volumes and adjoining land uses.
- S36, S38, S40: Subdivision curb and gutter street sections with curb face-curb face widths of 36 feet - 40 feet. Widths are dependent on projected traffic volumes and are defined in VDOT's subdivision street standards.

Functional Classification. This is a definitional system in which highways and streets are grouped into classes according to the character of service they are intended to provide. At the top of the hierarchy are principal arterials which are oriented to serving inter or intrastate travel and connect major regional activity centers. Examples of such roads in Loudoun County are Route 7, Route 28, Route 50. These roads normally serve substantial volume of through (*as opposed to locally oriented*) traffic and have higher design speeds. Major collectors provide service to large traffic generators not on the arterial system and serve the more important intracounty travel corridors. Examples of such roads in Loudoun County are Route 846, Route 606 and the Algonkian Parkway. Minor collectors link locally important traffic generators with major collectors and arterials by collecting traffic from local roads. These roads normally do not serve large amounts of through traffic. The lower levels of the functional classification system consist of various types of local roads. These roads provide access to adjacent land.

Access Format. The regulated limitation of access to a public road is called access control. It is achieved through the regulation of public access rights to and from the properties abutting the public roads. Access controls are required to insure safe and efficient operation of key roads with respect to anticipated traffic volumes and other characteristics of traffic flow. Generally access controls are required for the safe and

efficient operation of arterial and major collector roads and may be necessary for some minor collectors.

The following access control definitions and standards are used in the ELAMP:

**Limited Access.** No at-grade access is allowed. All access to the road is provided via grade separated interchanges or slip ramps to collector - distributor roads.

**Restricted Access.** At-grade access points to the public road must be a minimum of 1,000 feet distance from another road and, in general, will be restricted to intersections with other public roads. All access points must be aligned with a median crossover for a median section road.

**Controlled Access.** On controlled access roads, preference is given to through traffic to a degree that, in addition to access connections with selected public roads, there may be some access by private entrances/driveways. For median section roads the desirable distances between median breaks (*crossovers*) is related to the design speed of the road as follows:

DESIGN SPEED	DESIRABLE DISTANCE BETWEEN MEDIAN BREAKS (CROSSOVERS)
40 mph	700 feet
45 mph	800 feet
50 mph	900 feet

In general all access points to controlled access roads should be aligned with median crossovers. However, in selected cases, consistent with good traffic safety and road performances, access may be permitted to a median section road through a right turn in - right turn out entrance not aligned with a median crossover.

Access to local roads should be consistent with VDOT standards.

**Turn Lane Requirements.** Separate turn lane(s), left and/or right, are to be provided at all intersections where they are necessary for safety and to efficiently serve anticipated traffic volumes and operating conditions. Right turn/decel lanes are to be provided for permitted private entrances where required by VDOT standards.

**Design Speed.** This is a speed determined for design and correlation of the physical features of a road that influence vehicle operation; it is the maximum safe speed maintainable over a specified section of highway when conditions permit design features to govern. VDOT standards for road characteristics including curvature, super elevation, sight distance and gradients are related to design speeds and should be adhered to in the design of any specific road improvement.

Figure 6 a

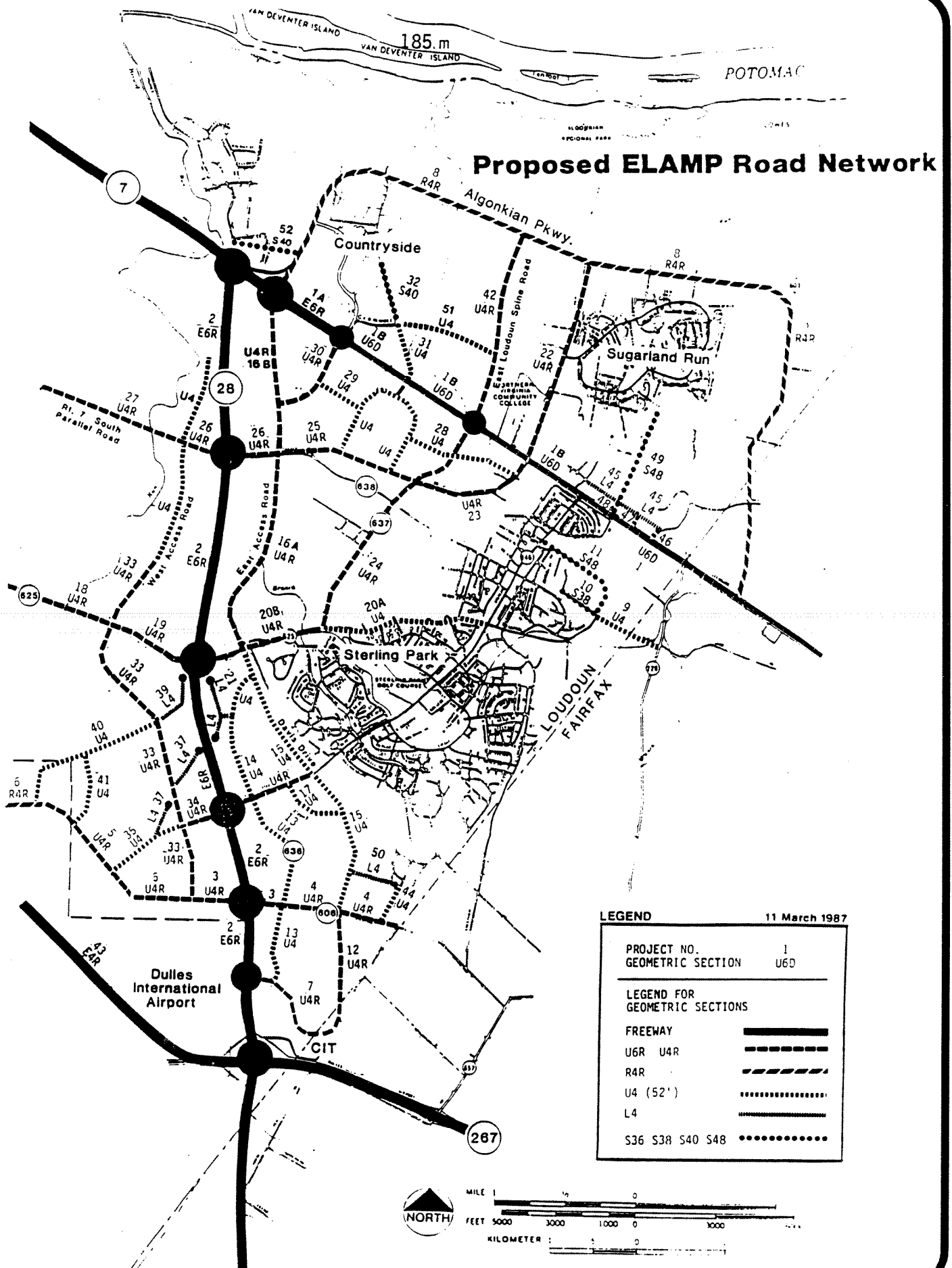
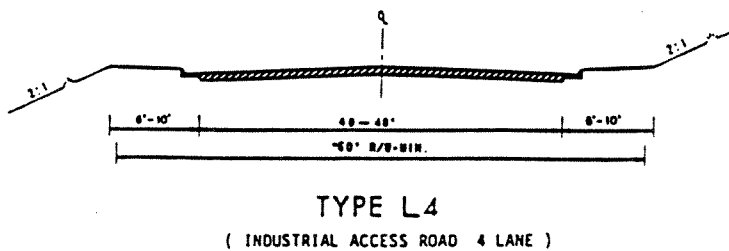
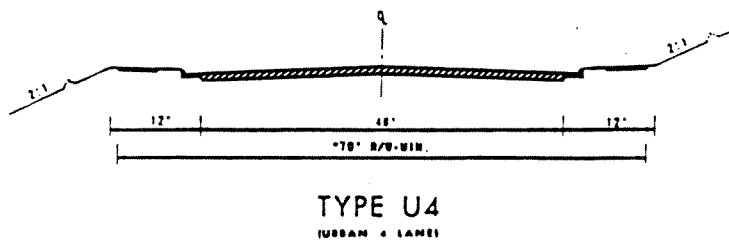
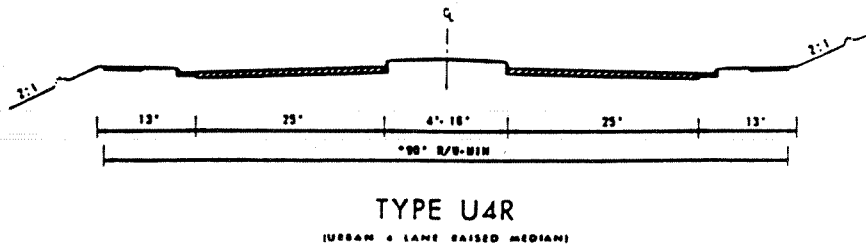
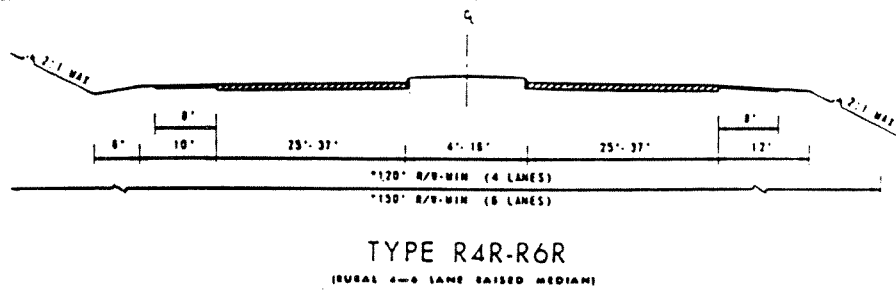
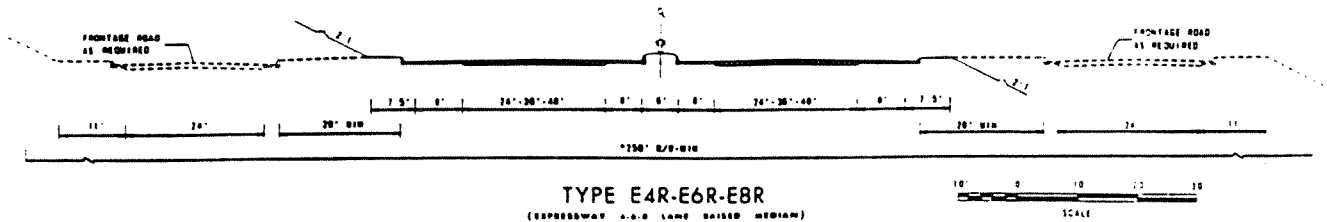


Figure 6 b

# TYPICAL SECTIONS



PROVISION OF SIDEWALK CONSIDERED ON A CASE BY CASE BASIS

COUNTY OF LOUDOUN

# ROUTE 7 CORRIDOR PLAN

## LEESBURG PIKE LOUDOUN COUNTY

FROM: LEESBURG CORPORATE LIMITS  
TO: LOUDOUN - FAIRFAX COUNTY LINE

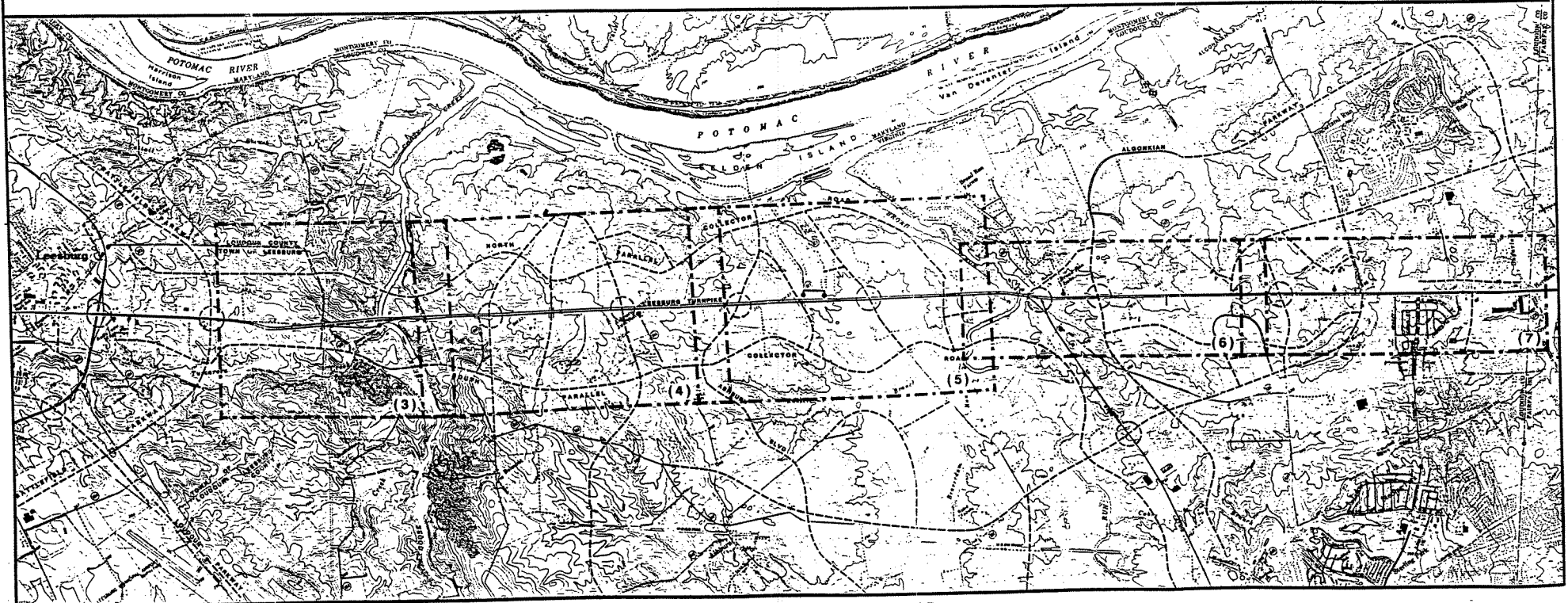
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Route 7 Corridor Plan



Prepared by: Transportation Planning Division With assistance from Loudoun County Planning Department

JANUARY 1989



CONCEPT PLAN SUBJECT TO CHANGE





# LOUDOUN COUNTY, VIRGINIA

Development and Regulatory Agencies ■ 39 Catcott Circle, S.E. ■ Leesburg, VA 22075 ■ Metro 478-1850

## THE ROUTE 7 CORRIDOR PLAN

The Route 7 Corridor Plan was adopted by the Board of Supervisors of the County of Loudoun on October 3, 1988. The Plan is a part of the County's comprehensive plan, amended to the Eastern Loudoun Area Management Plan (ELAMP), the Dulles North Area Management Plan (DNAMP), and the Leesburg Area Management Plan (LAMP).

The Route 7 Corridor Plan has been developed to address future traffic flow management along Route 7 from the Leesburg corporate limits east to the Fairfax County line. With continued development anticipated along this section of Route 7, the Planning Commission has deemed a comprehensive study of this corridor to be necessary for the development of an adequate road network plan more capable of accommodating the resultant traffic generated by new development and the continued growth experienced in the County.

The Route 7 Corridor Plan includes Route 7, proposed north and south parallel collector roads, a series of proposed north-south roads crossing Route 7 by flyover bridging, and north-south major arterial roads intersecting Route 7 at grade separated interchanges. Major roads in this corridor area are proposed to be four or six lanes.

The Plan proposes a limited access condition to Route 7 from Leesburg east to the proposed Algonkian Parkway interchange near the Countryside subdivision. From the Algonkian Parkway east to the Loudoun/Fairfax County line, the Plan proposes controlled access to Route 7.

The Plan is to be considered a guide for improvements to the Route 7 corridor. The intent is for this Plan to function as a tool, a guide to Loudoun citizens, the land development community and the County government through the decision making process for projects in this corridor area. Subsequent changes to the Plan can be made through the plan amendment process and/or the land development process.

The development of this Plan has been a cooperative effort. Involved in this effort have been the Planning Commission, individual citizens and citizen groups of the County, members of the business community active in the County, the Virginia Department of Transportation and County staff.

Inquiries concerning the Route 7 Corridor Plan can be addressed to the Transportation Division of the Department of Technical Services (telephone: 777-0220) or the Department of Planning and Zoning, Division of Comprehensive Planning (telephone: 777-0246).

## NOTES

### GENERAL

Road alignments are subject to refinements until such time as they have been through the subdivision and site plan processes and are ready for construction permit issuance.

The location of interchanges are conceptual in nature and are subject to refinement on the basis of approved record plats, subdivision plans, rezoning and special exceptions.

### PAGE 5

The final Route 7/Route 659 interchange design and location should accommodate the Washington Gas and Light gas line.

### PAGE 6

The location of the Lansdowne/IBM east flyover should be sensitive to the Belmont Plantation and adjacent development and could be moved as long as it meets VDOT requirements.

### PAGE 7

#### Potomac Farms:

- \* The north parallel road will be realigned to the north to lessen its impact on existing homes. This alignment may encroach on the floodplain and would need to be sensitive to floodplain requirements.
- \* A grade separated point of access that crosses the north parallel road will be provided to maintain access to the Potomac River. This access shall accommodate emergency vehicles.
- \* A second point of access that minimizes the attraction of through traffic will be identified.

### PAGE 9

The Route 28 west parallel road needs to connect to the Route 7 south parallel road. The crossing of Broad Run needs to be at the best engineering location which is to be determined by VDOT.

Prior to the Phase II Route 7/Route 28 interchange construction which eliminates direct access to the Broad Run Farms community, the location of a second point of access to the community must be identified.

### PAGE 10

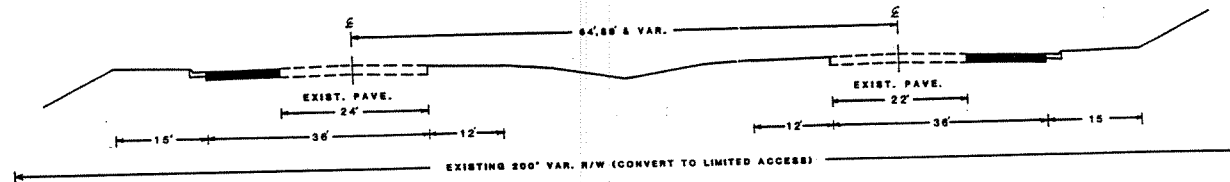
The design of the Algonkian Parkway interchange is to be reexamined in an effort to eliminate signalization.

### PAGE 13

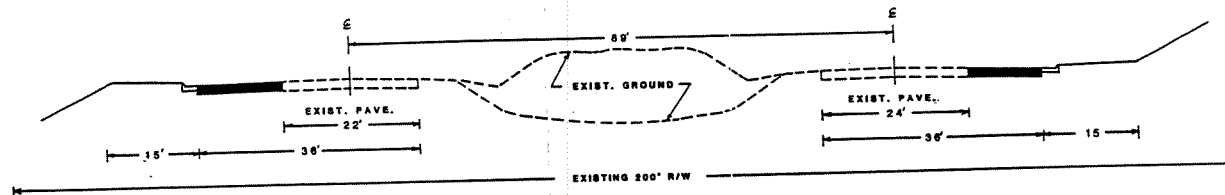
For the north service road, alignment adjustments and buffering should be used at the site plan stage to minimize impacts on residential areas and the lake.

# PROPOSED TYPICAL SECTIONS ROUTE 7 CORRIDOR PLAN

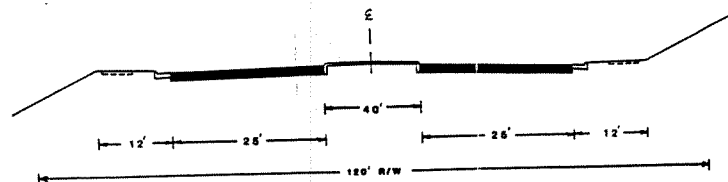
FR: LEEBSBURG CORP. LIMITS  
TO: ROUTE 28 INTERCHANGE



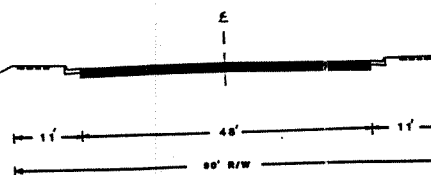
FR: ROUTE 28 INTERCHANGE  
TO: LOUDOUN-FAIRFAX CO. LINE



PARALLEL COLLECTOR ROADS AND  
NORTH/SOUTH COLLECTOR ROADS



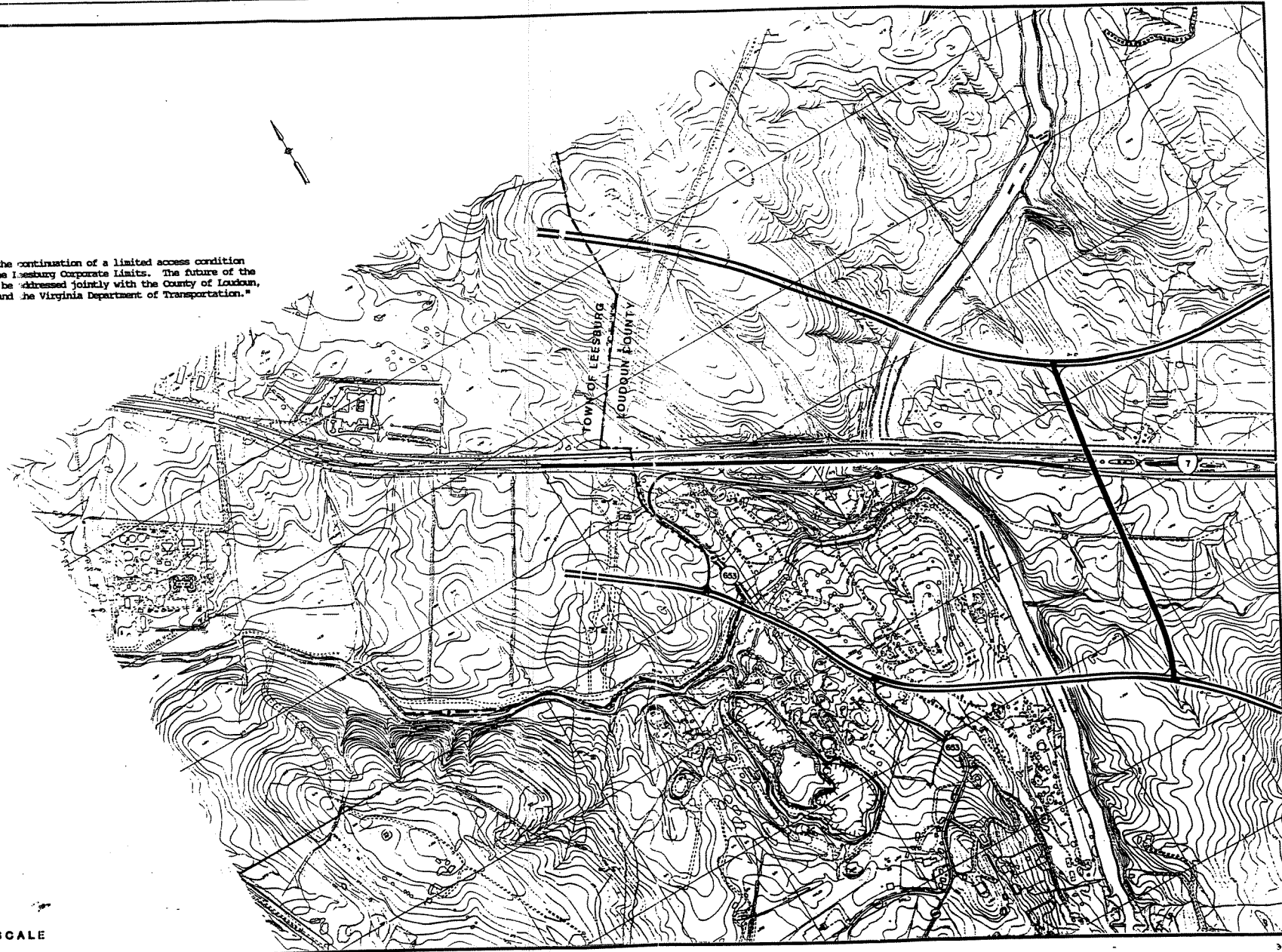
NORTH/SOUTH CONNECTOR ROADS AND SERVICE ROADS  
(width, including number of lanes, may vary)

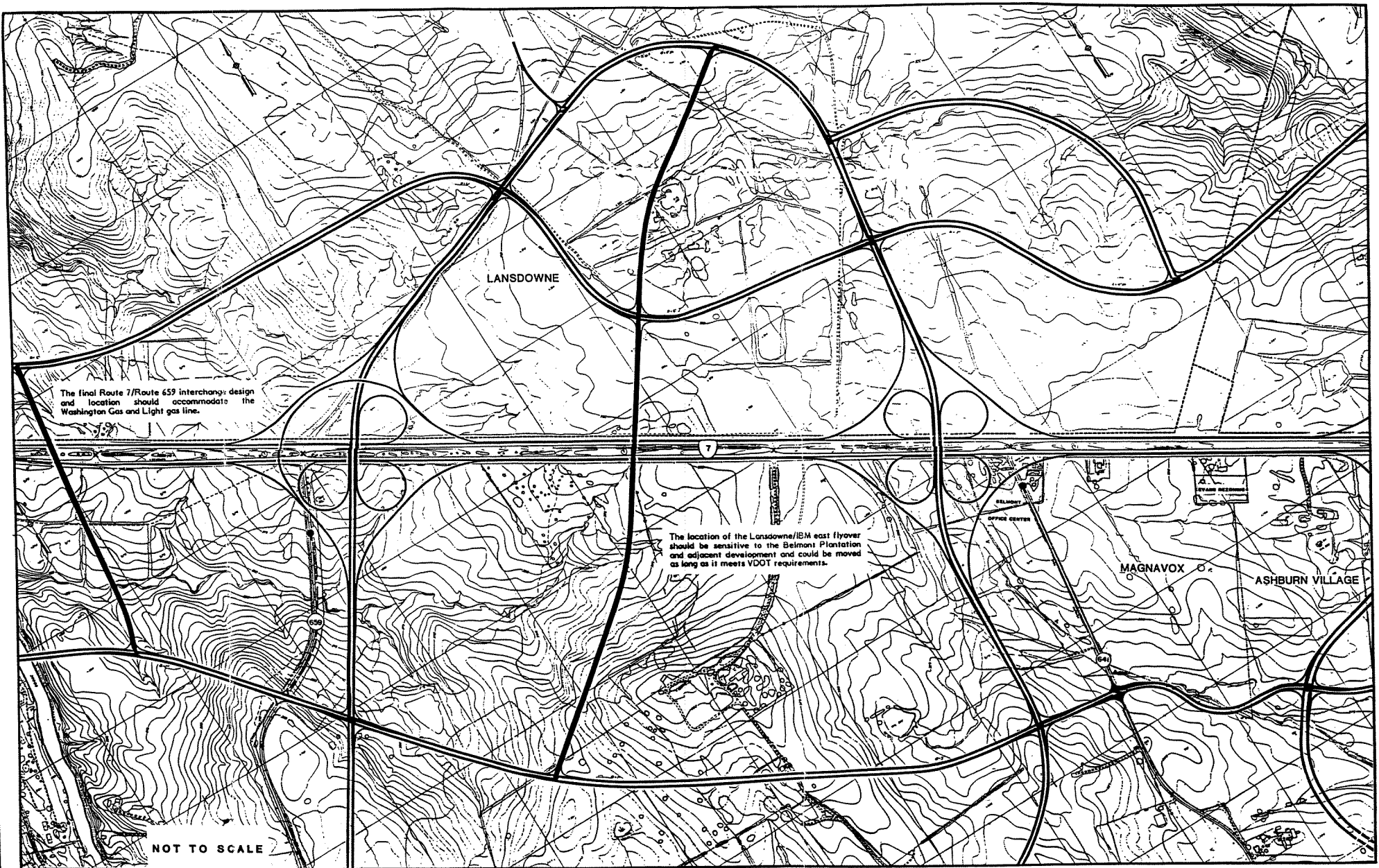


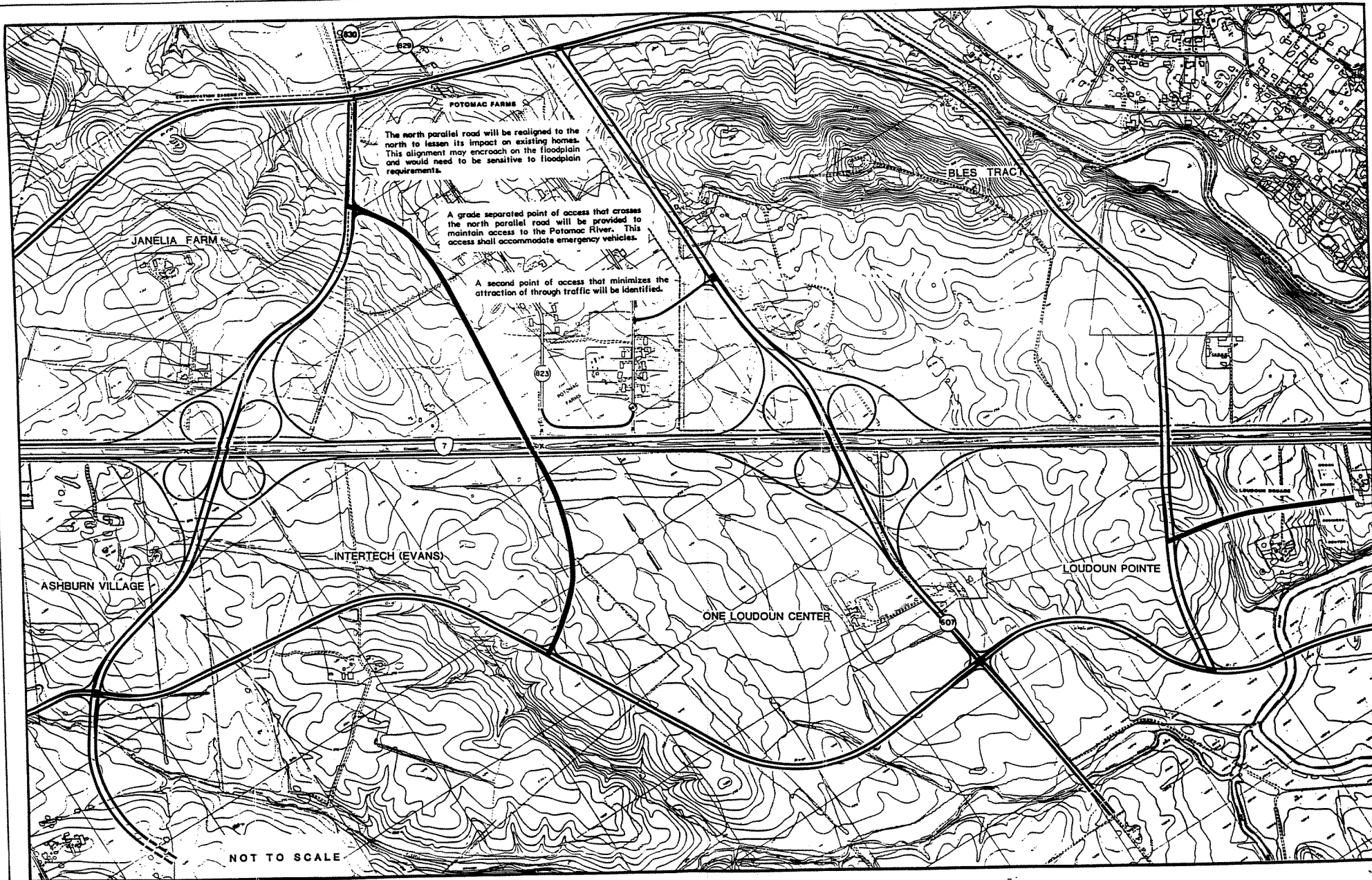
SEPARATE TURN LANES MAY BE REQUIRED AT MAJOR INTERSECTIONS

"The County endorses the continuation of a limited access condition for Route 7 east to the Leesburg Corporate Limits. The future of the Route 653 access will be addressed jointly with the County of Loudoun, the Town of Leesburg and the Virginia Department of Transportation."

NOT TO SCALE







Prior to the Phase II Route 7/Route 28 interchange construction which eliminates direct access to the Broad Run Farms community, the location of a second point of access to the community must be identified.

BLES TRACT

WINDMILL

LOUDOUN TECH. CENTER

The Route 28 west parallel road needs to connect to the Route 7 south parallel road. The crossing of Broad Run needs to be at the best engineering location which is to be determined by VDOT.

The design of the Algonkian Parkway interchange is to be reexamined in an effort to eliminate signalization.

NOT TO SCALE



For the north service road, alignment adjustments and buffering should be used, at the site plan stage, to minimize impacts on residential areas and the lake.



NOT TO SCALE

## APPENDIX II

### EASTERN LOUDOUN INVENTORY OF SELECTED SECONDARY ROAD AVERAGE DAILY TRAFFIC 1970-1978

Route	From	To	1970	1974	1976	1970	Av. annual % increase	Total % increase
606	634	775	1,228	1,791	1,990	2,309	8.2%	88.0%
606	775	28	1,524	2,224	2,508	2,107	4.1%	38.3%
606	28	605	3,181	5,033	6,529	8,128	12.4%	155.5%
625	607	28	-	-	-	1,315	N/A	N/A
625	28	775	-	-	-	3,673	N/A	N/A
625	775	637	-	-	-	4,008	N/A	N/A
625	637	846	-	-	-	3,132	N/A	N/A
625	846	604	-	-	-	450	N/A	N/A
637	625	638	382	535	605	950	12.1%	148.7%
637	638	7	300	640	730	993	16.1%	231.0%
637	7	839	-	7,041	7,983	8,080	3.5%	14.8%
637	839	826	1,097	922	1,403	1,781	6.2%	62.4%
846	7	625	8,890	13,338	13,657	15,458	7.2%	73.9%
846	625	1402	6,608	14,855	14,357	13,891	9.7%	110.2%
846	1402	1401	6,022	13,500	12,902	13,103	10.2%	117.6%
846	1401	1417	6,995	13,416	13,366	12,958	8.0%	85.2%
846	1417	1419	6,509	11,376	11,014	10,790	6.5%	65.8%
846	1419	636	5,813	10,060	8,120	9,863	6.8%	69.7%
846	636	28	5,590	7,725	6,619	8,359	5.2%	49.5%



Route	From	To	1970	1974	1976	1970	Av. annual % increase	Total % increase
1701	637	0.08M E begin loop	-	-	-	8,100	N/A	N/A
1701	0.08M E begin loop	1,702	-	-	-	6,191	N/A	N/A
1701	1702	1712 E Int.	-	-	-	4,244	N/A	N/A
1701	1712 E Int.	1735 S. Int.	-	-	-	2,279	N/A	N/A
1701	1735 S. Int.	1,742	-	-	-	1,976	N/A	N/A
1701	1742	1,725	-	-	-	2,488	N/A	N/A
1701	1725	1,724	-	-	-	2,609	N/A	N/A
1701	1724	1701 End Loop	-	-	-	4,291	N/A	N/A

Sources: 1970, 1974, 1976 Counts from Loudoun County RMP 1978 Counts taken May-August 1978 by VDOT and are generally understated from real traffic counts.

**OLD STERLING SMALL AREA PLAN  
TRANSPORTATION APPENDIX  
(REVISED EFFECTIVE JUNE 20, 1988)**

<b>ROADWAY</b>	<b>LOCATION</b>	<b>LANES RIGHT-OF-WAY</b>	<b>DESCRIPTION</b>
1. East Access Rd. Atlantic Blvd.	Steeplechase to Route 625	4 lanes-divided 90' row	U4R. Urban Minor Collector. Left and right turn lanes required at all intersections and median breaks. Desirable distance between median breaks 700'. 40 mph design speed.
2. East Access Rd. Davis Drive	Route 625 to Route 634 Extended	4 lanes-undivided 70' row (except) 90' row within 225' of major intersections.	U4. Urban Minor Collector. 52' curb face-curb face. Left and right turn lanes required at all major intersections. 40 mph design speed. Controlled access.
3. East Access Road Davis Dr.	Route 634 Extended to Sterling Blvd.	4 lanes-undivided 70' row (except) 90' row within 225' of major intersections.	U4. Urban Minor Collector. 52' curb face-curb face. Left and right turn lanes required at all major intersections. 40 mph design speed.
4. Route 634 Extended	Route 28 Overpass (new) to Davis Drive	4 lanes-undivided 70' row (except) 90' row within 225' of major intersections and between Glenn Dr. Extended and Davis Drive.	U4. Urban Minor Collector. 52' curb face-curb face. Left and right turn lanes required at all major intersections. 40 mph design speed. Controlled access.
5. Route 775/Glenn Drive Extended	Route 625 to Sterling Blvd.	4 lanes-undivided 70' row (except) 90' row within 225' of major intersections.	U4. Urban Minor Collector. 52' curb face-curb face. 40 mph design speed.

**OLD STERLING SMALL AREA PLAN  
TRANSPORTATION APPENDIX  
(REVISED EFFECTIVE JUNE 20, 1988)**

ROADWAY	LOCATION	LANES RIGHT-OF-WAY	DESCRIPTION
6. Route 636 Shaw Road	Route 625 to Sterling Blvd.	4 lanes-undivided 70' row (except) 90' row within 225' of major intersections.	U4. Urban Minor Collector. 52' curb face-curb face. 40 mph design speed.
7. Route 625 Church Road	1,200' west of gore point for Route 28 westside interchange to Route 637.	4 lanes-divided. 120'-160' row and limited access between Route 28 and Davis Drive. Land required for Route 28 interchange. 110' row between Davis Drive and Route 637.	U4R. Controlled access median divided major urban collector. Re-aligned section to become part of Route 28/625 interchange. Left and right turn lanes required at all intersections. 50 mph design speed.
8. Sterling Blvd. Route 846	Route 28 to Davis Drive	6 lanes-divided. 120'-160' row plus land required for Route 28 interchange.	U6R. Controlled access median divided major urban collector section to be re-aligned north at Route 28 interchange. Left and right turn lanes required at all intersections. 50 mph design speed.

**OLD STERLING SMALL AREA PLAN  
TRANSPORTATION APPENDIX  
(REVISED EFFECTIVE JUNE 20, 1988)**

ROADWAY	LOCATION	LANES RIGHT-OF-WAY	DESCRIPTION
9. Route 28	Fairfax County Line to Route 7	6 lanes-divided 200' row, plus land dedication required for interchange ramps at all proposed interchange locations.	<p>Freeway. E6R Limited Access. All at-grade access will be terminated when road becomes a freeway. Any short-term temporary access limited to existing intersections and stub roads. 60 mph design speed.</p> <p>Phase Improvement Program may include 4 and/or 6 lane major arterial sections. Left and right turn lanes required at all intersections/entrances during arterial phases of Route 28 improvements must be consistent with ultimate freeway design sections.</p>
10. "New" East West Connector Road	Route 636 to Davis Drive between Route 625 and Route 634 extended.	4 lanes-undivided 70' row	U4. Urban Minor Collector, 52' curb face-curb face, 40 mph design speed. This road is intended to be conceptual. The exact location to be determined during land development process.

## COMMUNITY FACILITIES PLAN

### INTRODUCTION

Community Services and Facilities take on special importance in the eastern Loudoun area. The area borders Dulles International Airport and is the location of prime industrial land. It has the largest population concentration in the County outside the Town of Leesburg. Therefore, the demand for services will be disproportionately high in eastern Loudoun, as compared to the balance of the County.

Community Services and Facilities serve one primary goal. This goal is to provide for the physical, cultural and safety needs of the community. The services of concern are fire and rescue, law enforcement, sewer and water, libraries, schools, parks and recreation. This section of the area plan analyzes the future community needs for these specific public facilities. This area plan element establishes a general guideline for location and timing of questions which are annually reviewed in the County Operating Budget and the Capital Improvements Program.

Facilities and services are expensive to provide. Therefore, demand must be recognized early so that costs may be planned for well in advance. Community facilities can also influence growth, either to promote or retard it at specific locations. Advance planning is necessary if facilities are to guide and not simply follow growth. Moreover, services and facilities are the visible response to community demand. They also respond to specific needs of public health, safety and welfare. Finally, community facilities, if properly located, can serve to foster community identity. This is especially needed in a suburban area such as the eastern Loudoun area where many people work outside the County.

With the increasing demands on the County budget and the desire to influence growth (*and foster community identity*) while responding to community needs, it is incumbent on the County and its citizens to carefully consider all the costs involved with each community facility or service. Accepting a privately contributed site at the wrong location not only does an injustice to its immediate service area, but offends the taxpaying community at large because additional funds will be expended at a poor location with limited service potential.

The County must consider advance purchase of sites and pursue methods which will reduce the tax burden for maintenance of community facility sites. Only in this way can facilities be assured in the most appropriate locations at the most reasonable cost. This is managed development in the best interest, providing for the health, safety, and welfare of the citizens of Loudoun County.

Residential and non-residential development proposals will be required to plan and design for a "*community focus*" within each planning area. The elements of these activity centers are (1) schools, (2) commercial centers, (3) fire and library facilities and (4) parks.

Community Services and Facilities can be thought of as providing for citizen needs on two broad levels, the "*community*" and the neighborhood. This is stated in the

Resource Management Plan as the "Village Center" concept. Under this concept, facility provision is focused to encourage a sense of community. This occurs at the neighborhood and community levels. A neighborhood level facility is one which is generally within easy walking distance. This would include elementary schools, neighborhood parks and, at times, a fire/rescue branch station. A community facility requires the population support of two or more neighborhoods. Neighborhood shopping centers are provided at this level, as are libraries, community centers and high schools.

## **POLICIES**

The items described below are specific policies adopted in the Resource Management Plan. The key objective of the Community Facilities Plan is to implement these policies. The planning recommendations offered in this section will become County policy and will be implemented with each new subdivision or planning effort.

### **1. RMP Provisions:**

Community Facilities and Utilities will be located to serve an optimum number of citizens and to be in agreement with the land use goals and policies as stated in the Resource Management Plan (RMP). These policies are specified under the "Community Development" section, pp. 230-232 in the RMP.

### **2. Future Planning:**

As part of the metropolitan area, Loudoun County and eastern Loudoun should coordinate facility and service provisions with other jurisdictions. (RMP, p. 198, #4).

### **3. Standards:**

Provision of services and facilities should maintain the highest community standards possible to promote the health, safety, welfare and order within the management area. (RMP, p. 197, #1).

### **4. Industrial Promotion:**

Public utilities will be planned to encourage expansion of the industrial base and increase employment opportunities at an appropriate rate. (RMP, p. 198, #2).

### **5. Phasing:**

Community facilities and utilities will be designed and phased at a scale and rate compatible with fiscal restraints and the impact of new construction. (RMP, p. 198, #2 and p. 232, #8).

### **6. Environmental Concern:**

Community facilities and utilities will be developed to limit environmental degradation (*RMP*, p. 194, #3, p. 196, #2, p. 198, #2).

7. Facility Function:

Community Facilities will be located to focus the community at the neighborhood or village center level to promote community identity. (*RMP*, p. 228, #8, p. 232, #8.)

8. Fiscal Management:

Develop multiple purpose facilities where compatible with service provision and where a contiguous population is to be served.

## SEWER AND WATER FACILITIES

### INTRODUCTION

The eastern Loudoun area has developed to a density requiring public water and sewer service. The objective for future development is to provide sewer and water to additional growth areas in a coordinated and planned manner. There has been adequate sewer and water for eastern Loudoun's growth in the past two decades, but there remain existing residential areas that require public facilities to promote the health and welfare of the local residents. These existing areas with inadequate facilities should be serviced at the appropriate time, in conjunction with new growth areas.

The Resource Management Plan (RMP) recommends that all areas designated as "Community" and "Community Development" areas should have public water and sewer. (See Figure 1, page 212). This policy will promote the phasing out of septic systems and development of adequate public facilities. The Loudoun County Sanitation Authority has the regulatory power to implement the County sewer policy which requires that all developers build the public infrastructure necessary for public health, subsequent to the Board of Supervisors' approval of a development (See Figures 2 and 3, pages 213, 214 for location of proposed and existing water and sewer lines.)

### RMP RELATED POLICIES

The following policies and goals have been adopted as guidelines for adequate service to all sewer and water users in eastern Loudoun.

Sewer and water extensions will be designed and constructed to comply with the goals and policies as stated in the RMP. Specific areas for these extensions will be reviewed according to the "Community" and "Potential Community" sections of the Plan, and according to area-specific policies and standards. (RMP, p. 230, #7).

#### 1. Design and Construction:

The Loudoun County Sanitation Authority will regulate the location and design of the sewer and water facilities in conjunction with the Planning Department, Environmental Health Department and other appropriate agencies. (RMP, p. 196 and 197, #1).

#### 2. Sewer and Water Extension Locations:

The entire area planning district will be served by sewer and water facilities for all major development of medium or high density. Low density development tied to individual septic systems, will require waivers from the County Department of Planning and Zoning and the Sanitation Authority. (RMP, p. 252).



### Figure 1

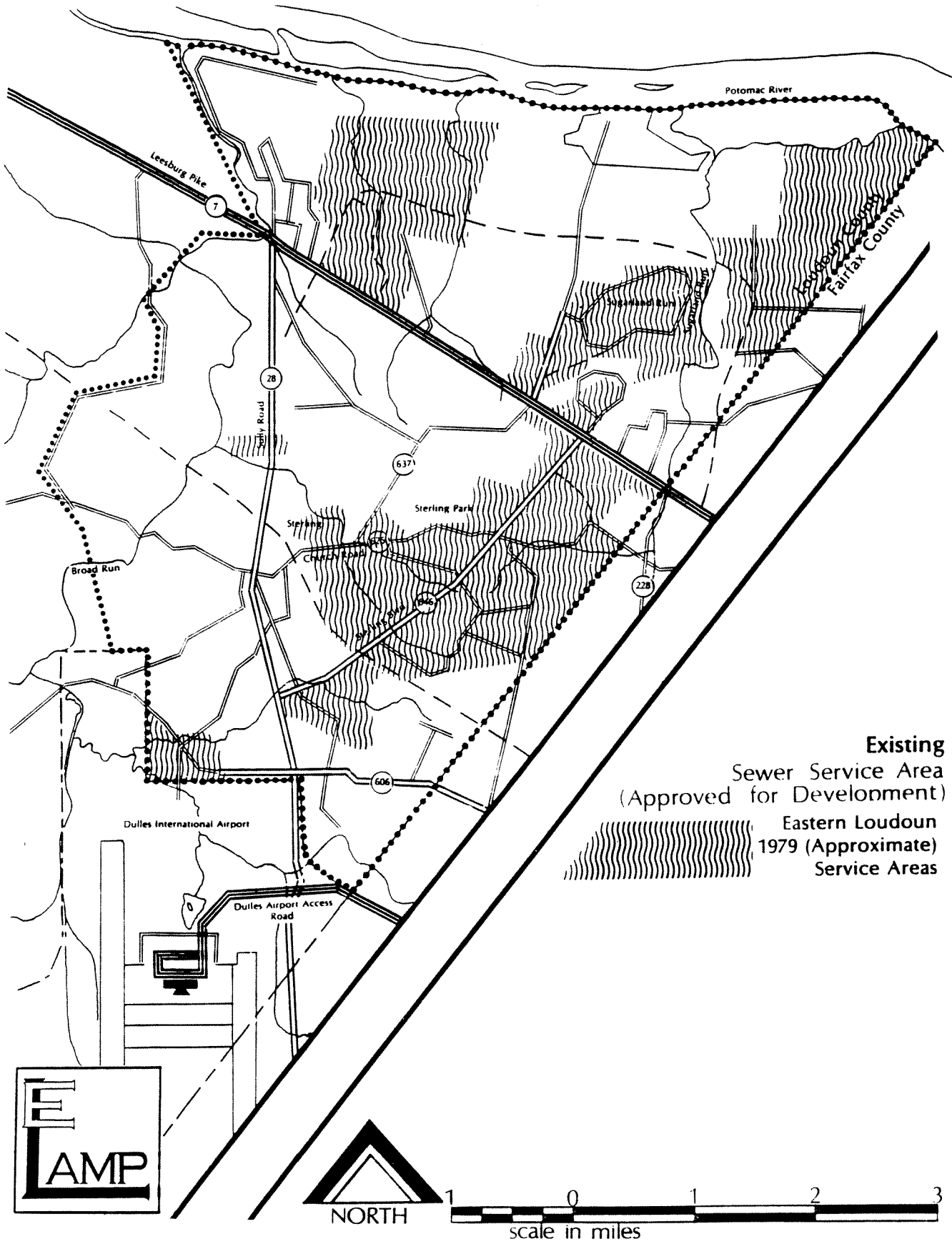


Figure 2

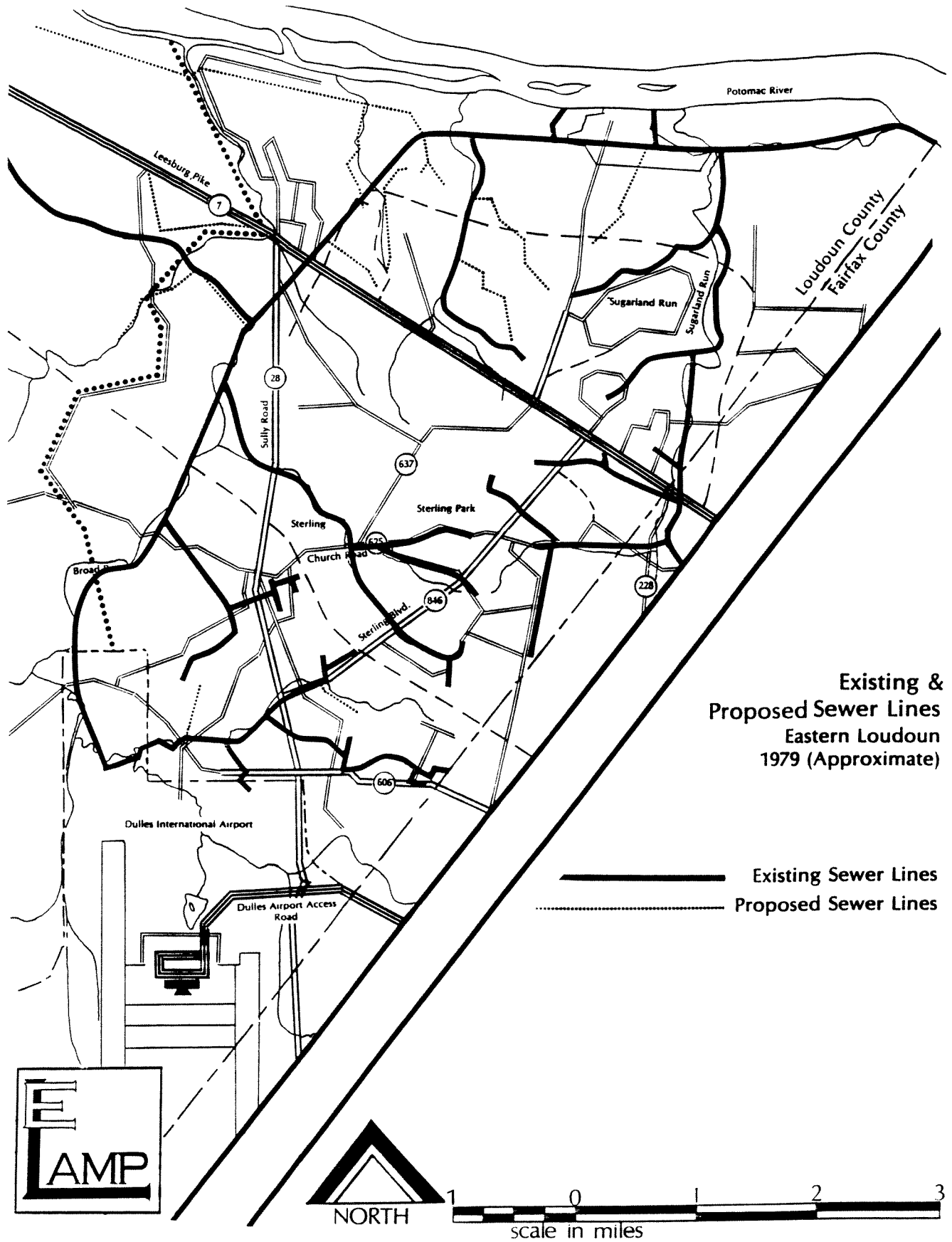
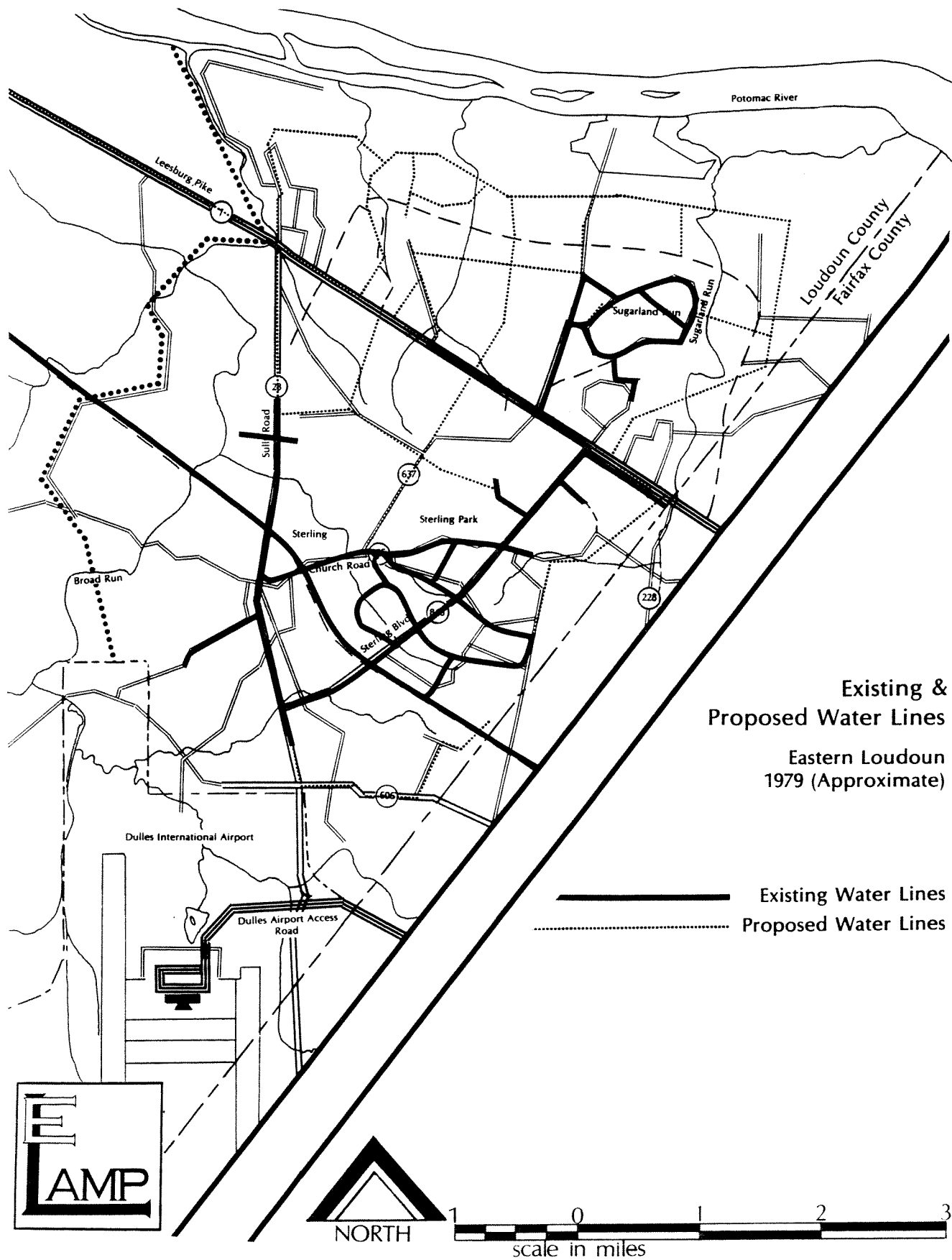


Figure 3



3. Size of Lines:

The location of lines for sewer and water will be planned by the Sanitation Authority for the appropriate density for all future development, including fire service. (*RMP, p. 253 #4*)

4. Industrial Promotion:

Sewer and water extensions will be designed and constructed to provide for extensive industrial and office development. Expanded employment and industrial bases are high priorities for future development. (*RMP, p. 253, #3*).

5. Phasing:

If the Blue Plains expansion program is deferred or capacity limits are imposed on Loudoun County, sewer capacity will require a phased approach to development. The proportions of sewer capacity should be allotted equitably by the Sanitation Authority to approved industry, office and commercial development and to housing development. Phasing areas should be established and implemented. (*RMP, p. 197, #2; p. 253, #4*).

6. Expansion of Treatment Capacity:

The County should encourage alternative treatment plants to that at Blue Plains. If Blue Plans is limited with regard to Loudoun County capacity, new sources will have to be planned and developed. (*RMP, p. 197, #4*). (*See implementation section of this plan*).

7. Environmental Review:

The location of sewer and water lines should be reviewed with a view to causing the least environmental disruption to the area. (*RMP, p. 197, #2; p. 253, #3*).

8. Capital Improvements Program:

The existing and proposed sewer and water facilities that require public expenditure should be initiated as a Capital Improvements Program (*CIP*) item and planned for implementation by the Sanitation Authority. (*RMP, p. 254, #1*).

## **EXISTING CONDITIONS**

The majority of eastern Loudoun is, or is able to be served by public sewer and water. Sanitation facilities such as on-site disposal (*septic systems*) exist in the area, but have a high failure rate due to soil and groundwater problems. Generally, these areas are one acre lots for single family homes in the Broad Run Farms, Richland Acres and Oak Grove subdivisions. Due to the poor soil conditions, these areas will require an alternative sewage disposal method to promote public health and safety. Public water

service is available to the majority of eastern Loudoun except for various individual lots scattered throughout.

The capacity of future sewer and water connections is determined by the Blue Plains sewer treatment plant in Washington, D.C., and the Fairfax City water reservoir on Goose Creek. The County and the Sanitation Authority have formal agreements governed and implemented by the Loudoun County Sanitation Authority that regulate the amount of sewage treatment available and the capacity for water development.

The capacity of both water and sewer facilities could be exceeded in the near future if additional capacity is not allocated at Blue Plains and on Goose Creek. Over 4,000 housing units are planned for construction in the area which do not have Sanitation Authority approval for sewer capacity reservation at Blue Plains. Also, extensive commercial and industrial expansion is planned without reserved capacity. Water supply may also be a problem in the future if the flows in Goose Creek diminish. The implementation section offers alternative solutions to these potentially very significant problems.

The history of Loudoun County's sewer capacity is complicated. The initial Blue Plains agreement (1963) allowed for 17.93 million gallons of effluent per day from Loudoun County. This was altered in 1971 to 3.208 million gallons, until the expansion of the plant could be completed. As of September 1, 1979, the County was contributing 1.937 million gallons per day to Blue Plains, and had committed 1.1 million gallons for future development, making a total of just over 3.0 million gallons.

Capacity for future projects will be determined by two factors: (1) timing and size of existing projects, and (2) completion of the expansion of Blue Plains, projected for the summer of 1980. New residential, commercial and industrial development in eastern Loudoun could be restricted if the 3.208 million gallons per day limit is exceeded. Therefore, the timing of existing and new projects is critical to the growth of eastern Loudoun. The District of Columbia has recently informed the Sanitation Authority by letter that they acknowledge their responsibility to provide sewer capacity to Loudoun County under the 1963 agreement and will use their best efforts to honor that agreement.

## **POLICIES**

### **Future Development:**

New sewer and water utility proposals will be reviewed and implemented by the Loudoun County Sanitation Authority. Development costs will be borne by the private developer. Priorities for sewer and water extensions will be given to the following areas as they receive the appropriate approvals from county agencies for development.

1. Industrially zoned land which has the capacity for growth and which is located adjacent to highway facilities, especially in conjunction with Highway Access Funds to promote industrial expansion.

2. Consideration shall be given to adjacent properties during the rezoning process, specifically for sewer and water capabilities. The capacity for sewer facilities will be specifically tied to the planned density for the watershed or sewer service area.
3. Areas planned for commercial development that are presently zoned C-1 or PD-SC.
4. Other areas adjacent to Routes 28 and 7.

#### Existing Sewer Problem Areas:

The properties that are experiencing constant sewage disposal problems should be programmed for sewer extensions at the appropriate time. Those large areas are: Broad Run Farms, Oak Grove and Richland Acres. Many other smaller properties exist in eastern Loudoun that have soils and disposal problems. The process for obtaining public sewer service would be:

1. Area designated as a sewer extension area by Resource Management Plan, with concurrence of residents.
2. Funding source identified:
  - a. Environmental Protection Agency (EPA)
  - b. Private developer within the general area.
  - c. Community Development Block Grant (CDBG) application.
  - d. County expenditure or matching funds.
3. Inclusion of project into County CIP.
4. Finance and construction schedule established by Sanitation Authority.

#### **IMPLEMENTATION**

##### Sewer Treatment Capacity:

Additional sewage treatment facilities should be identified in view of the uncertain future of Blue Plains. Options include:

1. *"Pumpdown"*: Trade off of capacity with Fairfax County with their sewage pumping station off of Colvin Road at Route 7. Cost would be approximately \$5 million for 10% of the capacity of the pumping station. The pumping station is designed for 10 million gallon ultimate capacity in the year 2000.

2. Dulles Airport. In 1974 plans were discussed for a treatment plant to be built at Dulles Airport. Loudoun should be included in discussions if such plans are initiated.

#### Additional Water Capacity:

The reservoir on Goose Creek is controlled by the City of Fairfax, but Loudoun County has a legal agreement to purchase water for the County at cost. If additional water flow is necessary, the future options available would be:

1. Fairfax City Reservoir: Increase the capacity of the reservoir to allow more storage of water.
2. Goose Creek: The amount of water extracted from Goose Creek could be increased. This requires state approval.
3. Potomac River: The water supply project being undertaken by the Fairfax County Water Authority in eastern Loudoun can be tapped for further water reserves for the surrounding population.

## SCHOOLS

### INTRODUCTION

The location, design and rate of construction of school facilities are key factors in defining the future physical character and financial status of both Loudoun and the entire County. School buildings can be seen as the social focus for a neighborhood, as well as providers of valuable open space and recreational opportunities for the surrounding households. The provision of quality education for the students of eastern Loudoun will require major public investment in the future. Since school construction and operation account for more than 75% of the annual County budget, the number and capacity of new schools requires special emphasis in the Area Plan.

Schools require extensive land area (*up to 50 acres for a high school*) and cost about \$4,000,000 for the standard elementary school. The rate of construction of schools affects the County's bond capacity, bond rating and tax rate, and affects the allocation of funds to all other County operations and programs. For these reasons, school location must be planned far in advance of actual construction. Proper siting criteria must be developed and relayed to prospective private developers prior to a rezoning application, in order to promote appropriate proffers. Developers should be encouraged to proffer both sites and funds to be applied toward the construction of new schools which would more equitably place the burden of new educational costs on the residents who will use them.

This element of the public facility plan discusses the locational issues and extent of school development. The other important issues relating to financing and design will require a cooperative planning effort with the School Board and other County agencies.

## **POLICIES**

The following policies govern the future implementation of school facilities in eastern Loudoun. These policies apply not only to school programming but also to recreational facilities, transportation and public utilities.

### **1. Relationship to Resource Management Plan:**

School development will comply with the public facility provisions of the RMP to assist in the control of growth and to limit unwarranted and poorly timed growth. Only "*Villages*", "*Potential Communities*" and "*Community*" areas will be considered appropriate locations for schools. (RMP, p. 256, #1).

### **2. Capital Improvements Program:**

All new public schools and additions will be included in the County CIP to program the construction over the five-year life of the CIP.

### **3. Location:**

New school sites should be located to encourage maximum pedestrian usage of the school, with safe and efficient vehicular access.

### **4. Recreation:**

New and existing school properties will be encouraged to accommodate County recreational facilities to promote efficient use of public property for multiple purposes (RMP, p. 256, #3.)

### **5. Utility Extensions:**

The provision of sewer and water extensions for schools will be planned to promote concentrated development with a community focus.

### **6. Vehicular and Pedestrian Access:**

Each new school site should be designed to provide safe and efficient vehicular and pedestrian access, including grade separated underpasses where necessary.

## **EXISTING FACILITIES**

There are currently six elementary, two middle and two high schools serving 27,069 people of the eastern Loudoun area. The Broad Run High School is located outside the planning area, but serves portions of eastern Loudoun. It will be necessary to construct a new high school as CountrySide, Cascades and Pocahontas (now part of Cascades) are developed north of Route 7. The Meadowland Elementary School will relieve pressure



on the Sugarland Run Elementary School in the Sugarland vicinity. The new Forest Ridge subdivision may require a new elementary school in that area. The following table describes the capacity situation of the existing schools in eastern Loudoun. Given the projected population growth, the existing excess school capacity will be utilized in three to four years.

<b>TABLE 1</b>					
<b>EXISTING SCHOOL FACILITIES<sup>1</sup></b>					
School	Design Capacity	1978 Enrollment	1979 Enrollment	Use Capacity <sup>2</sup>	Use Balance
Sterling Elementary	660	555	452	579	127
Meadowland Elementary	760		474	692	218
Seneca Ridge Middle	1,200	618	640	1,080	440
Rolling Ridge Elem.	760	577	592	628	36
Park View High School	1,500	1,143	1,263	1,350	87
Sugarland Elementary	760	680	493	654	161
Sterling Middle	1,050	1,047	998	945	-53
Guilford Elementary	660	527	604	579	-25
Sully Elementary	660	592	552	579	27
Broad Run High School	1,325	836	728	1,193	465

## **FUTURE REQUIREMENTS**

School enrollment in the County has been declining overall and is projected to continue falling as household size drops until 1985-86. However, household size is higher in rapidly growing communities such as eastern Loudoun, and student generation per household can be expected to be higher. Furthermore, as the housing stock increases, so do the number of school children. The following table indicates anticipated school children by planning area. Actual students should attend the schools approximately six months after the year-end date indicated.

<sup>1</sup> The discussion and estimates in this section were prepared by the planning staff, working with the School Board staff from the most recently released information from the School Board. The School Board will make the final decision about timing and location of facilities, in conjunction with the Planning Department.

<sup>2</sup> The use-capacity of schools shall be defined as the number of students that can be housed in a school building based upon the system-wide program as determined by the School Board. The use capacity of schools shall be revised annually at the beginning of each school year.

**TABLE 2****EASTERN LOUDOUN PLANNING AREA - PUPIL FORECASTS<sup>3</sup>**

Planning Area	Feb. 1979	1979	1980	1981	1982	1983	1984	1985	1990
North of Route 7	1,889	2,296	2,739	3,362	4,298	4,987	5,505	6,005	7,512
South of Route 7	4,576	5,150	5,521	5,847	6,175	6,420	6,472	6,508	6,788
Totals	6,465	7,446	8,260	9,209	10,473	11,407	11,977	12,513	14,300

Enrollment in most schools in the eastern Loudoun area is currently under both design and use capacity (See Table 1). Students per school are expected to remain relatively stable except where new residential development, primarily north of Route 7, will raise enrollment. However, new state and federally mandated education programs and new capacity criteria are expected to substantially decrease school use capacity by 1980 which will tax the existing schools even further. These programs, in addition to population growth, will require additional new capacity in the near future. Given the excess capacity of existing schools in eastern Loudoun, plus the projected residential development, the area will be experiencing severe capacity problems by 1982 or 1983.

#### 1. Future School Needs

The County School Board has several choices that address school facility requirements. With growth in residential units, the Board may:

- a. Build new school buildings.
- b. Expand existing buildings with permanent structures.
- c. Expand existing buildings with temporary classrooms.
- d. Bus students to neighboring schools that have excess capacity.

New schools will eventually be required in eastern Loudoun, although the timetable for actual construction is difficult to project at this point. The general standards for new school construction are shown in Table 3.

---

3

The discussion and estimates in this section were prepared by the planning staff, working with the School Board staff from the most recently released information from the School Board. The School Board will make the final decisions about timing and location of facilities. Figures given are for December 31 of each year.

TABLE 3		
1979 NEW SCHOOL CONSTRUCTION CRITERIA <sup>4</sup>		
Type Facility	Maximum Student Capacity	Maximum Pedestrian Distance
Kindergarten		8/10 miles
Elementary	760	1 mile
Middle	1,200	1 1/2 miles
High	1,500	1 1/2 miles

Figure 4, p. 223, indicates the locations of both existing and proffered school sites in eastern Loudoun. The major growth area north of Route 7 has four school sites tentatively offered for school dedication. They are:

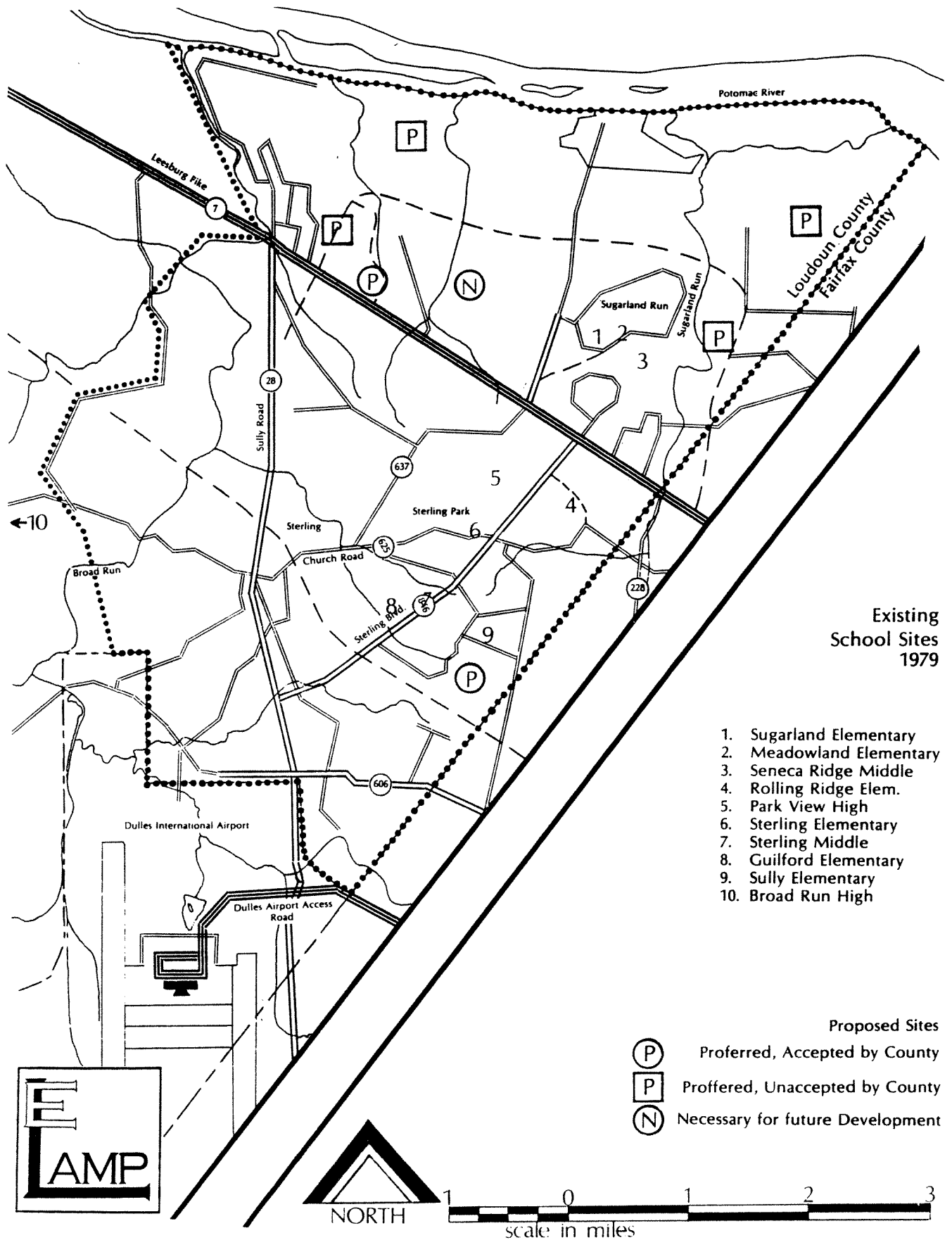
Cascades: 1 elementary school

Therefore, north of Route 7, only one additional elementary school will be needed, if the School Board accepts the four sites already proffered to the County. South of Route 7, one elementary school, possibly two, will be required.

4

- 222 -

Figure 4



## 2. Proposed New School Sites:

Aside from their purpose of response to public need, schools are important in focusing community identity. If schools are to be used to help create this sense of community, land acquisition for school sites in new developments should be carefully planned. The following land is currently owned by the County or has been proffered for schools.

### County Owned:

- a. Seneca Ridge Site: This is an 87 acre site currently owned by the Loudoun County School Board. It is north of Route 7, south of Sugarland Run, with access from South Cottage Road. The Seneca Ridge Middle School is located on the northern edge of this site. The School Board purchased this site with long-range plans to develop a future high school here. Part of the land is in the floodplain which could present construction problems. If this site is to function adequately as a school site, a direct link with the Seneca Hills property across Sugarland Run Creek will be desirable. The traffic pattern should be designed so that access to the site does not overburden Sugarland Run residents with school vehicles. Due to the large size of the site, it has good potential for a school/park site if the floodplain is utilized. A small community scale park with playing fields would be appropriate at this location.

### Proffered Sites:

- a. CountrySide: One middle school site and two elementary school sites have been proffered by the developer. The middle school site on the western edge of the tract should be more centrally located due to its large potential service area. This is also true of the elementary site on the northern edge of the tract. Furthermore, both sites would require difficult crossing of the Route 28 loop road. A grade-separated crossing is necessary. The site on the southern edge of the tract is more centrally located and is acceptable despite the number of road crossings required for elementary aged children.
- b. Cascades: Currently, one centrally located site has been proffered by the developer. According to current estimates, this single site will be insufficient to serve the build out demand of both Cascades and the adjacent Seneca Hills subdivision. An additional site needs to be obtained in this area.
- c. Forest Ridge: There is one satisfactorily located site within the Forest Ridge subdivision at this time. This site may be the first of the proffered sites developed for construction of an elementary school.

Additional schools will most likely be necessary as increasing amounts of new development occur. The particular area of concern should be the Pocahontas

(now western part of Cascades) Tract between Route 637 and the CountrySide and Environs subdivisions.

If the Seneca Ridge site is developed as a combined middle school/high school campus, the Pocahontas tract will need 2-3 elementary schools. However, if this option is not taken, an additional high school site will be necessary in this vicinity.

A coordinated trails system to provide safe passage for children is an integral part of appropriate site selection. Trails are further discussed in the Recreation and Transportation sections of the Plan.

## **IMPLEMENTATION**

### **1. Community Development:**

This plan embraces the concept of "*neighborhood schools*" as described in the Resource Management Plan, especially with regard to elementary schools. All schools should be centrally located within a large planned development or at the logical point between several smaller housing clusters. The "*neighborhood schools*" concept for elementary schools should be stressed in the negotiated proffer process.

### **2. Trails:**

Trails leading to schools should be proffered (*see Transportation Plan*). If trails intersect with arterial, freeway or collector roads, grade-separated crossings need to be provided.

### **3. Buffers:**

All schools should be located within or adjacent to residential areas. Middle and high schools can act as buffers between residential and other uses. Use of schools after hours should be encouraged to minimize vandalism and maximize use.

### **4. Recreational Activity:**

Recreational amenities, especially ballfields, should be an integral part of each school site.

### **5. Homeowner's Association:**

If extra recreational facilities or land are available adjacent to a school site, the county should either insure that the homeowners' association is financially capable of maintaining the site or a park maintenance staff should be set up by the County.

6. Location:

Elementary schools should be at least one block off of major thoroughfares.

7. New sites:

One additional elementary school site should be acquired in the Cascades/Seneca Hills vicinity. If a site cannot be acquired through the proffering process, it should be acquired by some other means and placed in the 1981-82 Capital Improvements Program. The Pocahontas (now western part of Cascades) developers should proffer a minimum of three school sites.

8. Temporary Use of Proffered Sites:

Proffered school sites should be utilized as temporary recreational sites if they are not slated for immediate school construction. Sites should be prepared at general county expense for this purpose.

9. Environmental:

The County will require that all new school sites should be proffered on land which is reasonably easy to develop with limited slope problems, floodplain land or environmentally sensitive or critical land. A soils analysis will be required for each proffered site.

10. Proffers:

School sites should be encouraged as proffers from private developers in advance of need. Pedestrian bridges and tunnels and playing fields are also appropriate proffer items.

11. Energy:

Every effort should be taken to promote energy efficiency in design and operation of school facilities.

12. Existing Proffered Sites:

The proffered sites should be reviewed by the Loudoun County School Board and the proper sites dedicated to the County for future school use.

13. Future Proffered Sites:

Assuming the School Board accepts the proffered sites, there will be a need for two or more elementary schools north of Route 7, given the projection for growth in that area. The Pocahontas Tract could offer such a site.

#### 14. Capital Improvement Program (CIP)

All new public schools and additions will be included in the County CIP to program their construction over the five-year life of the CIP.

### **LIBRARIES**

#### **EXISTING FACILITIES**

The eastern Loudoun area has only one public library, located in the Sterling Community Center. The Northern Virginia Community College also provides limited library services to the area. According to the state standard of .6 square feet per person, the Sterling Library is serving approximately 11,800 more people than it should. This is borne out by the high average daily use and the extremely heavy use of the bookmobile stop in the Sugarland Run area. Although not considered primary public facility needs, more library services will certainly be required as the area grows.

Two library sites in the Mirror Ridge and CountrySide developments have been proffered by private developers in the area north of Route 7, an area which is expected to place the most serious strain on library services in the future. Both sites could function as temporary or permanent library sites. They have excellent road frontage and are adjacent to proposed neighborhood shopping centers and higher density residential areas, which would promote easy access and encourage pedestrian utilization.

#### **POLICIES**

##### 1. Resource Management Plan Provisions:

Library facilities and future construction needs should be reviewed and given consideration with other public facilities and investments in the Eastern Loudoun Planning Area, as determined by the adopted Resource Management Plan.

##### 2. Library Services:

Quality, quantity, types and levels of library services and administration should be provided, based on standards approved by the Virginia State Library Board and the American Library Association.

##### 3. Future Library Locations:

The County's future planning efforts should include library sites and services as part of the Capital Improvements Program. Proffered locations within planned communities are desirable. A library should be within one block of a major thoroughfare with good visibility and should be in, near or adjacent to a shopping center. There should be easy pedestrian access by sidewalks and trails. The Sugarland Square proffered site should be considered as a potential library site due to its location in Sugarland Run and its proximity to commercial development.



#### 4. Multiple Use:

If a library building is to be utilized for multiple purposes such as a community center, there must be separate entrances.

### **IMPLEMENTATION**

Although library resources are expected to be limited over the next few years, library use is expected to increase markedly with the projected population growth in eastern Loudoun County. Implementation techniques are as follows:

#### 1. Bond Issue:

The County should consider a bond appropriation for future library facility construction.

#### 2. Library Plan:

The County should undertake an extensive library plan that analyzes future needs for library facilities over the next decade. This plan should include standards for library sites in eastern Loudoun which could be proffered by developers.

#### 3. Library Construction:

As the Countryside and Environs subdivisions develop, the proposed library site at Countryside should be considered for a permanent facility. If the county sees fit, at or near the buildout of the Pocahontas (now western part of Cascades) Tract, an additional permanent library site should be developed somewhere along the Route 637 corridor.

## **PARKS AND RECREATION**

### **INTRODUCTION**

The primary function of the Parks and Recreation Plan is to insure adequate recreational opportunities and facilities for the citizens of the eastern Loudoun area. Both park facilities and the land on which to build them are necessary to respond to increased citizen demand for active and passive recreational pursuits. As more citizens come to the eastern Loudoun area, additional facilities are necessary if even the current service level is to be maintained. Early acquisition of land for park sites, open space and trails would be cost efficient and is necessary to insure adequate recreation for all citizens before the available open land has been built up.

## **POLICIES**

The Resource Management Plan incorporated policies for parks and recreation. These have been reiterated here with emphasis on the eastern Loudoun area. Other applicable policies are also included.

1. Future Development:

Preserve the unique quality of open space and village development patterns in future residential development. (*RMP, p. 209.*)

2. Citizen Awareness:

Make citizens more aware of available recreational opportunities within eastern Loudoun and the balance of the County.

3. Planning:

Encourage the advance acquisition of sites for parks as a part of the planning efforts to maximize County spending power. (*RMP, p. 260, #1.*)

4. Historic Sites:

Make citizens more aware of existing historic sites within eastern Loudoun and the County which can be used for recreational activity.

5. Energy Conservation:

Parks and recreational sites should be developed to promote limited use of the automobile. Small parks should be located within each major subdivision with appropriate recreational activities available.

6. Coordination:

Coordinate park site and school site planning for efficient use of public land. (*RMP, p. 260, #2.*)

7. Critical Areas:

Create park sites using environmentally critical areas and other land areas not suited for intensive development. (*RMP, p. 260, #3.*)

8. Trails:

Link community activity areas by open space corridors, such as stream valleys, trails, pedestrian walkways and bikeways. (*RMP, p. 260, #4.*)

9. Access:

The County should promote access to all residents of the County, including handicapped citizens.

**EXISTING FACILITIES**

Passive and active recreation are provided in eastern Loudoun by both the County and by private subdivisions. The following is a list of parks and recreational facilities that exist in the eastern Loudoun Area. The relative locations are indicated in Figure 5, page 138.

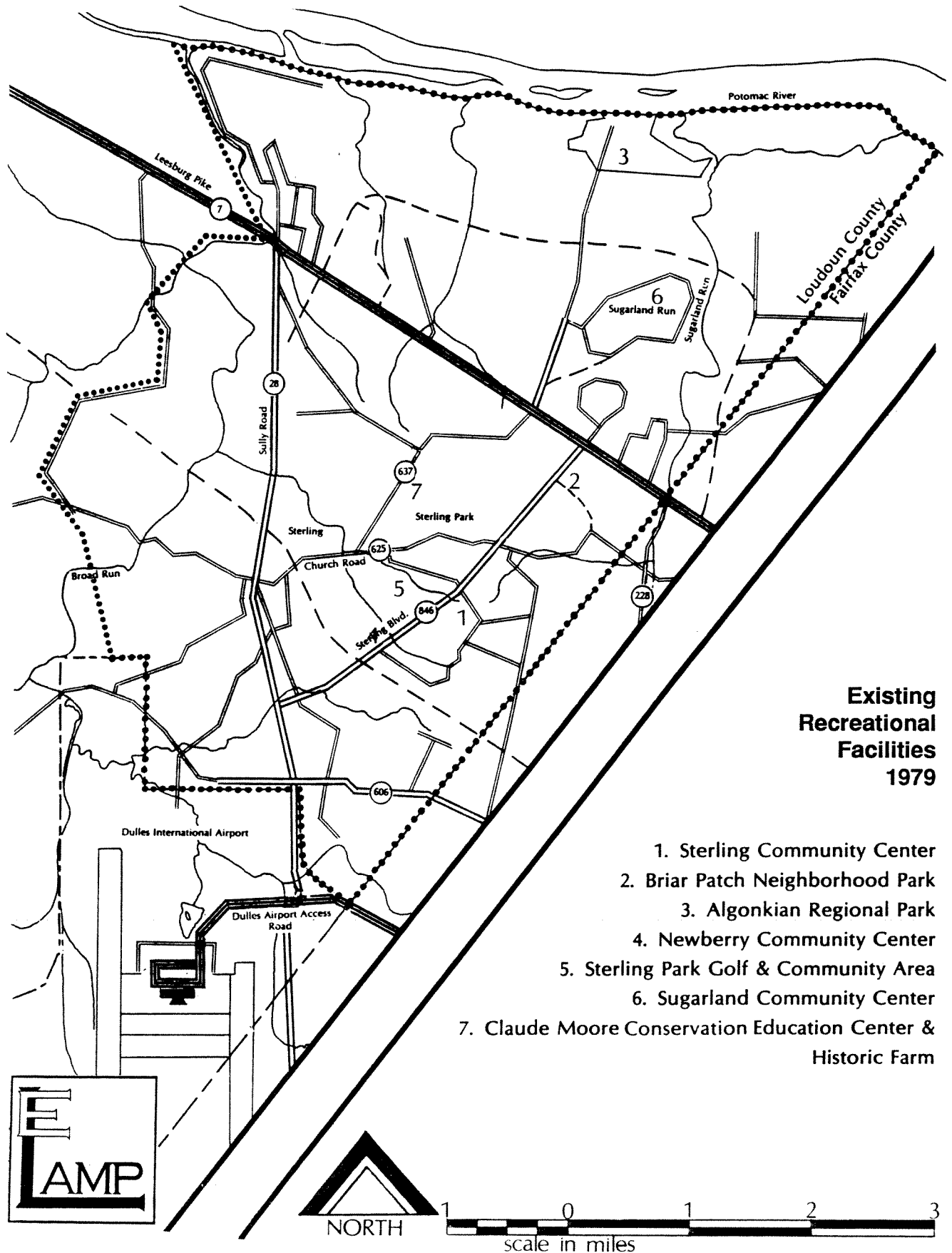
<b>TABLE 4</b>		
<b>EXISTING RECREATIONAL FACILITIES</b>		
<b>FACILITY</b>	<b>TYPE FACILITY</b>	<b>OWNERSHIP</b>
Briar Patch Park	Neighborhood Park	Loudoun County
Sterling Community Center	Community Facility	Loudoun County
Algonkian Regional Park	Golf, swimming and active	No. Va. Regional Park Authority
Newberry Community Center	Private Community Facility	Homeowners' Association
Sterling Park Golf, Swim & Tennis Club	Private Club	Sterling Park Golf, Swim & Tennis Club
Sugarland Run Community Ctr.	Private Community Center	Homeowners' Association
Claude Moore Conservation Education Center and Historic Farm	Private Open Space	National Wildlife Federation
Capital Courts	Private Club	Private Corporation

A. Description of Existing Facilities:

The existing facilities are analyzed in terms of their location for efficient provision of recreational service and their expansion potential.

The County owns a four acre neighborhood park known as "*Briar Patch*" plus the Sterling Community Center (*See Figure 5, page 138*). Both sites are poorly located for easy, safe pedestrian access for the majority of area residents. Furthermore, the community center is limited to indoor recreational activities and the County does not presently own any contiguous land for future expansion. The balance of County owned recreational activities are offered at athletic fields on the nine school sites with the eastern Loudoun area. Overall, existing recreational

Figure 5



facilities are used to maximum capacity, particularly the athletic fields. During the past two years, the Parks and Recreation Department has scheduled every available field to its maximum capacity. This seriously affects informal recreational opportunities which are forced into the local streets. As land is developed, additional pressure will be placed on an already inadequate system.

Recreational facilities can address additional special needs. Recently, juvenile delinquency has become a serious problem within the eastern Loudoun area, with problems such as vandalism and harassment of shoppers at the Sterling Park Shopping Center and other areas. Recreational facilities and programs can supply a useful mechanism to reduce this problem. Young people need a place to go where both structured and informal activities are permitted. Thus, as population increases, demand for recreational space for youths and for youth programs is becoming more apparent.

Algonkian Regional Park substantially supplements existing and planned county and private recreational areas. However, like the county sites, access is difficult without a car. During the next two fiscal years, the Northern Virginia Regional Park Authority plans to construct picnic shelters, tennis courts, a swimming pool, and a miniature golf course as well as to initiate major landscaping and road improvements. The site is located on Route 637 at the Potomac River. Existing facilities include an 18 hole golf course, a boat launching ramp, picnic tables, multiple purpose fields, olympic sized swimming pool and a clubhouse.

The Northern Virginia Regional Park Authority expects to continue its efforts to acquire land along the Potomac River to create a scenic trail. The recently opened Washington and Old Dominion Trail (*W&OD*) is expected to be completed from the County line to Goose Creek by 1980. Further development of the trail will occur as funding becomes available.

Other recreational amenities in the area are supplied on a private basis through homeowners' associations and private clubs. Activity on these sites is limited to residents in the immediate area who are members of the associations or of the clubs. The Sugarland and Newberry Community Centers offer swimming pools and clubhouses for their members' use, and many programs are available. Sterling Park has no homeowners' association, but the Sterling Park Golf, Swim and Tennis Club offers recreational facilities to its members. In the future, to insure that private sites fully serve their intended clients, mandatory homeowners' associations should be established with increased responsibility for operation and maintenance. This would help assure adequate site maintenance and access to all members within a specific neighborhood.

## B. Future Recreational Development

### 1. Standards for Future Recreational Development:

Recreation in the eastern Loudoun area plays a major role in creating community identity. This is done by two methods: (1) focusing community solidarity through centralized activity area; (2) separation of larger

communities with linear parks. For this reason, two generalized standards adapted from national recreational criteria are offered as guidelines for future recreational development. First, local parkland should be provided within one mile of all portions of residential areas. The second standard is tied to the population and necessitates that 2.5 acres of active recreation area be provided for every 1,000 people.<sup>5</sup>

Determining how many parks are needed and what sizes they should be is the function of definitions and standards. Therefore, the standards which follow indicate appropriate guidelines for recreational provision and community focus.

a. Definition of Parks

Active parks in the eastern Loudoun area should fall under one of the following general definitions to be used for planning land acquisition and guiding site dedication in eastern Loudoun.

<b>TABLE 5</b>		
<b>PARK CRITERIA<sup>1</sup></b>		
<b>Park Type</b>	<b>Acres</b>	
Neighborhood Park	3-10	Playground, athletic fields, picnic tables, tennis and basketball courts. Service area: 1/2 mile ideal; 3/4 mile maximum.
Community Park	10-50	Community center, outdoor theater, buffer, plus everything in neighborhood parks. Service area: 1 mile ideal; 2 miles max.
Greenbelt Park	Linear	Special purpose buffer, stream valley park, trails, wildlife refuge, golf courses.
County or Regional Parks	50+	Include all uses mentioned above, plus any special activities such as camping, boating, shooting ranges, etc. Service area: county-wide.

<sup>1</sup> Loudoun County Department of Planning in conjunction with the Department of Parks and Recreation.

<sup>5</sup>

Standards derived by Parks and Recreation Department, using national standards and recommendations from Site Planning by Kevin Lynch, 1974, 2nd edition, p. 312.

b. Recreational Facility Size Standards:

Specific standards adapted from the State of Virginia guidelines are necessary to determine demand and appropriate acreage for each use:

<b>TABLE 6</b>		
<b>PARK SIZE CRITERIA<sup>6</sup></b>		
<b>Facility</b>	<b>Standard/Pop.</b>	<b>Acres</b>
Athletic Fields (baseball, softball, soccer)	1 per 1,500	4 acres/field
Tennis Courts	1 pair per 2,000	1 acre/pair
Basketball Courts (outdoor) (half court)	1 per 500	1/2 acre/court
Swimming Pools - 25 meter 50 meter	1 per 10,000 1 per 20,000	4 acres/pool 7 acres/pool
Outdoor Theaters	1 per 20,000	10 acres
Golf Course (18 hole)	1 per 20,000	200 acres
Community Centers	1 per 15,000	25 acres

c. Trails

Currently, the Washington and Old Dominion Trail System (W&OD), and the Northern Virginia Regional Park Authority's Potomac Trail are the only existing trails within eastern Loudoun. Residential communities do not tie into these trails at this time, either for transit or recreational purposes. Trails through greenbelt parks could serve an excellent recreational need. With careful study, trails such as these could become a coordinated trails system to provide access to community facilities and shopping. Further discussion will be found in the Transportation section of this plan as well as specific functional and design criteria.

<sup>6</sup>

Developed by Department of Planning in conjunction with the Department of Parks and Recreation.

d. Location Standards<sup>7</sup>

Probably the most important question beyond, "*Do we need a park?*" is "*Where should a park be located?*" With this in mind, and to improve future site selection decisions, the following park location standards are recommended for adoption by the County.

1. To encourage park use, there should be easy pedestrian access by coordinated trails and sidewalks to all parks, excluding regional or County parks.
2. The park must be located within or adjacent to residential areas so that the park is within walking distance of intended users. School parks, especially those attached to elementary schools, could be a suitable option.
3. Neighborhood parks must be located within or adjacent to residential areas so that the park is within walking distance of intended users. School parks, especially those attached to elementary schools, could be a suitable option.
4. Community parks should be within one mile of intended residential users.
5. Community parks can act as buffers between two residential communities or between residential areas and areas with incompatible uses.
6. For each 275 households (*approximately*) there should be 2.5 acres of local parkland available (*per 1,000 population*).

2. Future Residential Needs

Analyzing active recreational needs can be estimated by applying the standards recommended under Table 3, page 222, Park Size Criteria. The most immediate need in the area is for multiple purpose athletic fields. In some cases, standards fall short of demand. Utilizing the criteria of Table 6, Table 7 was calculated to indicate demand for specific facilities.

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7

Ibid.



TABLE 7			
RECREATIONAL FACILITIES NEEDS <sup>2</sup>			
Facility	Required by Standard	Existing Facilities	Balance
Athletic Fields	18 Multiple Purpose Fields	29 <sup>8</sup>	+ 11
Tennis Courts	27 Courts	16	-11
Basketball Courts	27 Court	32	+ 4
Swimming Pools	2.7 - 25 meter pools	1.5 (private)	-1.2
Outdoor Theaters	1.4 theaters	0	-1.4
Golf Courses	1.4 18 Hole Courses	2	none
Public Community Centers	1.8 Indoor Centers	1	-.8

<sup>2</sup> Calculation based on December 1979 population estimate of 27,069. Note Appendix.

Table 7 attempts to estimate likely demand. However, the category of athletic fields is somewhat misleading. School sites comprise the majority of fields and they are available for a limited number of hours. Many sites can be used only for baseball and not for soccer which further limits use. There is a higher demand for true multiple purpose athletic fields than for other facilities. It is clear that the eastern Loudoun area is in need of a substantial number of recreational facilities if supply is to meet demand.

## **IMPLEMENTATION**

### **1. Acquisition Priority:**

Acquisition by purchase, condemnation or proffer should occur in the following sequence where a choice is possible for the purpose of capital projects programming at the County and regional level: (1) athletic fields (*baseball, soccer*), (2) community centers, (3) basketball courts, (4) outdoor theater, (5) trails, (6) tennis courts, (7) swimming pools, (8) golf courses. Where dedication by the development community is not possible, the County will program park expenditures through the Capital Improvements Program.

<sup>8</sup>

The number of existing fields is misleading since not all fields are multiple purpose, nor are all fields available for public use at all times (*school fields*). The Committee also expresses the need for more multiple purpose fields.

2. Special Studies:

A Recreation Plan should be prepared and adopted as part of the County's Comprehensive Plan. The Parks and Recreation Department should develop space requirements for a variety of recreational activities within each type of park, working with the Department of Planning.

3. School Parks:

As neighborhood parks are to be actively encouraged, the County shall explore expansion of school site size to permit school parks and community centers. Since school sites already play a primary role in recreational activities in eastern Loudoun, this would seem appropriate.

4. Sanitary Landfill Sites:

Landfill sites should be considered for future community parks, both passive and active.

5. Park and Recreational Development Activities:

The staff should prepare a County Recreation Plan that defines the overall park needs for the entire County and should then determine how eastern Loudoun can address these needs in proffers, capital investment and new facilities.

6. Proffer Criteria:

No active recreational park property proffered by a private developer will be accepted by the County, unless the soils and other environmental properties are conducive to acceptable design standards.

7. Sterling Community Center Expansion:

In order to provide land for expansion of the community center, the adjacent East Apartment site, off Holly Avenue, should be investigated for such expansion. The County could accept a higher density on the overall 37 acre tract while using two-three acres as a recreational expansion area.

8. Community Center Needs:

Given the extensive development planned north of Route 7, a new community center, with the necessary recommended facilities, should be built when the population north of Route 7 reaches 15,000. Specifications:

- a. Acquire land by purchase or proffer (25 acres) at a central location, i.e., near Route 637.
- b. Begin programming for construction with the 1981-82 Capital Improvements Program.

- c. Include future expansion capability for ballfields in design considerations.

9. School Property:

Existing and future school property and facilities shall be used for community recreational activities. The Loudoun County School Board, Board of Supervisors, Parks and Recreation Department and/or other authorized organizations shall permit alternative supervision and maintenance procedures for such community recreational facilities, including use of responsible organizations in lieu of paid County personnel.

10. Trails:

Residential trails should be tied into regional trails and greenbelt park trails at a future date, by proffer, easement or purchase. (*See Community Design Plan*).

11. Linear Parks:

Use floodplain as part of linear parks, open space or potential active recreation areas where possible.

The W&OD Trail and the Vestal's Gap Road should be supported as part of a linear park system and trails from residential areas should tie directly to these trails where possible.

12. Neighborhood Parks:

Neighborhood park sites should be considered as an appropriate part of any development zoned for R-1 or greater density.

13. Buffers:

Where possible, recreational areas or parks should act as buffers between less compatible land uses.

14. Adaptive Use:

The old Sterling Elementary School shall be considered for active community usage pending a positive feasibility study by the County.

15. Community Parks:

Community parks (10-50 acres) with multi-use facilities are particularly important in highly populated areas such as eastern Loudoun. Large residential developments should, whenever possible, combine during the planning process to provide a community park.

## **LAW ENFORCEMENT**

### **EXISTING SITUATION**

The tremendous population and employment growth in eastern Loudoun have been accompanied by a substantial increase in juvenile delinquency, vandalism and other community crimes. These problems necessitate increased police protection and associated public facilities and services.

The Loudoun County Sheriff's Department is responsible for law enforcement in Loudoun County. Local community groups, as well as the Eastern Loudoun Area Planning Committee, feel that the County Sheriff can continue to provide adequate law enforcement services for the next five years if the proper number of personnel are assigned to eastern Loudoun, and the personnel are properly trained and paid and possess the necessary support facilities.

### **POLICIES**

1. The County should provide the Sheriff's Department with the manpower and support facilities required to provide all areas of the County with professional and efficient law enforcement.
2. The existing substation facilities should be expanded or moved to a larger facility to accommodate police function and a magistrate's office.

### **IMPLEMENTATION**

Expanded law enforcement facilities should be planned and programmed as a part of the County's Capital Improvement Program.

## **FIRE AND RESCUE**

### **EXISTING CONDITIONS**

The eastern Loudoun volunteer fire/rescue service is one of the best in the region. However, as pressures of new residential and industrial growth increase, demand on the existing system to maintain the current service level will become increasingly difficult and costly. The Sterling Park station, assisted by the temporary substation in Sugarland Run serves approximately 7,500 households. As development occurs north of Route 7, problems of time and distance will become more acute for the Sterling Park unit located over a mile from Route 7 near the Sterling Park Shopping Center. With the probable future industrial development in the Route 28 Corridor, another fire/rescue station will be needed. However, it would be extremely difficult to provide staffing for such a station because there are few residential units in the area; therefore, few or no volunteers could be recruited.

Nonetheless, the fire/rescue service is sufficient for the majority of the planning area at this time, despite some basic distance and access problems, specifically, the area to the east of Sugarland Run which has poor access, and the Broad Run Farms area and Route 606 and Route 28 corridors which have distance problems. Fortunately, there are reciprocal agreements with certain fire companies in Fairfax County which are of substantial aid in protecting these areas. However, as growth increases, these problems of time and distance will become more acute. Staffing during normal working hours is already a severe problem and the Sterling Park Fire/Rescue Center now pays two full time persons to man the station during daylight hours.

It is clear that new fire and rescue facilities will be required to meet the future demand of the growing residential and industrial areas. This plan will indicate proffered sites and the most logical locations for future facilities.

### **POLICIES**

#### **1. Protection:**

Provide adequate fire/rescue protection in a timely and efficient manner for the citizens and businesses of the eastern Loudoun area. (*RMP, p. 258, #1*).

#### **2. Site Location:**

Provide fire/rescue protection at the most logical location for time and distance limitation. (*RMP, p. 258, #1*).

### **ANALYSIS OF POTENTIAL SITES**

New locations, dedicated for fire/rescue service use, will be required to insure adequate protection. Five sites have been proffered north of Route 7 as possible

fire/rescue sites. None of these sites has been officially dedicated at this time. The subdivisions that have been reviewed for proffered fire station sites are: (See Figure 6, p. 242).

1. CountrySide:

This site is located adjacent to a commercial area with access onto a major internal thoroughfare. It will have easy access to Route 7 and Route 28 on the northern edge. With the proposed connecting road to Route 777 and the adjacent Environs subdivision, this site will serve a large population to the east.

2. Cascades:

The site location is not yet confirmed but it is expected to have direct access onto the proposed Route 28 loop. This site would serve both the Cascades and Seneca Hills subdivisions. A station at this site would appear to be a necessity if effective fire/rescue protection is to occur.

3. Sugarland Square:

This site is less desirable than other options since it is landlocked within Sugarland Run. It has poor access to Route 7 and is not likely to be effective in aiding future subdivisions along Route 637. The site will revert to the developer in five years if not developed as a fire station. The area plan recommends that this site be considered for a temporary library facility.

4. Seneca Ridge:

This site is the poorest location proffered for fire/rescue services. The site is landlocked, has no direct access to a major thoroughfare, and will be in a poor position to adequately serve 2,000 households. If the Fire Marshal agrees, this site should be discounted as a potential fire station.

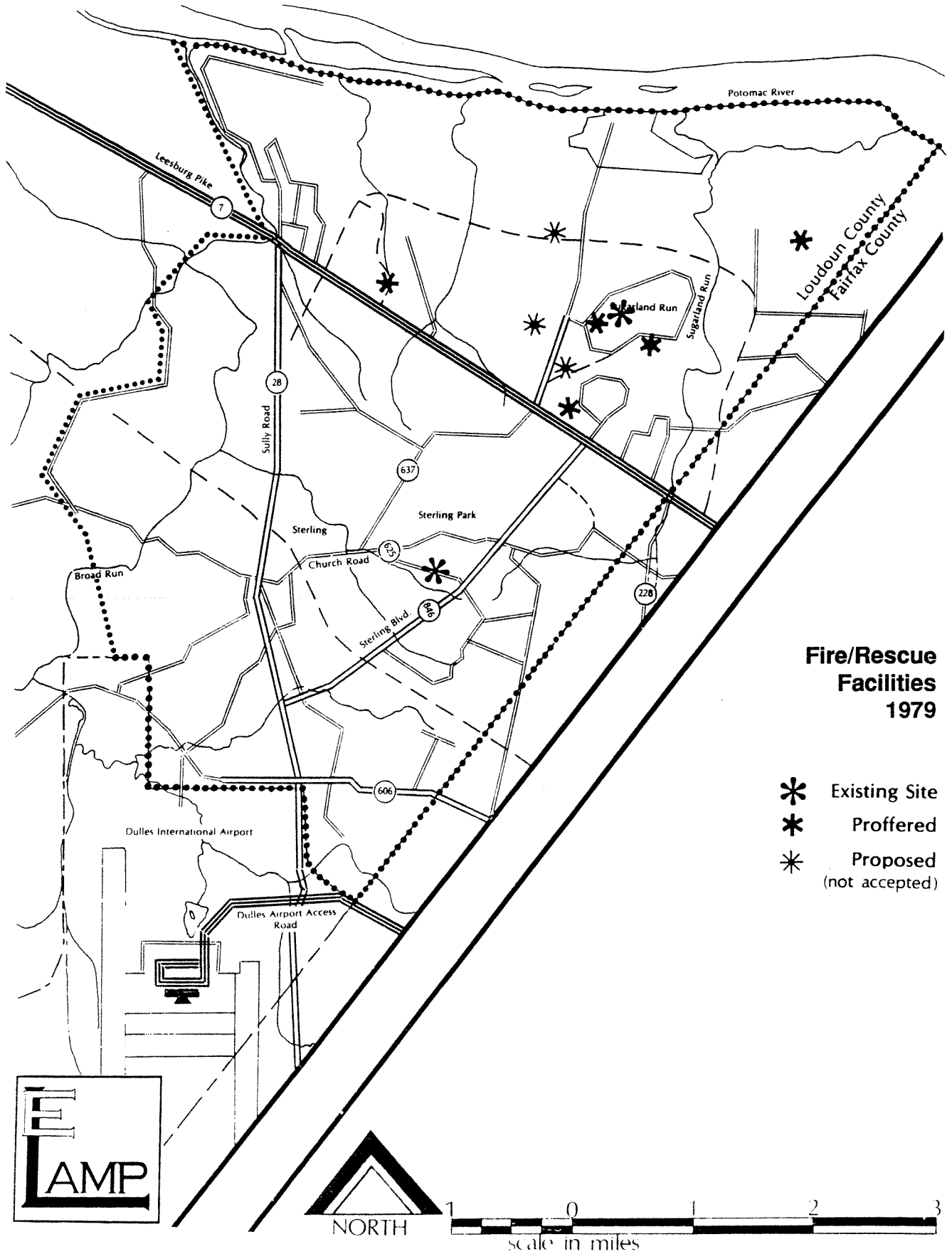
5. Point of Woods at Cardinal Glen:

This site has direct access to Route 7, and is nearly opposite the Sterling park entrance. For this reason, it is too close to a major intersection and creates substantial overlap of the current safety center. This site would not substantially improve service to areas north of Route 7 which need it. It is a poor location for a fire station.

6. Route 637 Corridor - North of Route 7:

The area north of Route 7 should be serviced by a station off of Route 637 as close to Route 7 as possible.

Figure 6



## **IMPLEMENTATION**

### **1. Location**

A general rule to determine adequate demand for fire/rescue facilities is one station per 2,000 households. Additional criteria should include proximity to several major roads and location at the center of the station's primary service area. Consideration of road congestion in determining location is a major factor. Large intersections are poor locations for fire/rescue sites.

#### **Location Standards for Fire/Rescue Sites:**

- a. Access to major thoroughfare (*speed limit: 40 mph, state maintained, hard surface road*).
- b. Within 100 years of major thoroughfare.
- c. Within 2-3 minutes of Route 7 or Route 28 (*note Cascades-Seneca Hills exception*).
- d. Fire/rescue within same building for permanent location.
- e. Apparatus to include at least one pumper and one rescue unit.
- f. Multiple use site or adjacent to other public site, especially community center or other recreation site, where possible.
- g. Approximately 2,000 households should be considered a threshold value creating demand for a new fire/rescue facility.

### **2. Timing:**

In order to insure that fire/rescue protection is offered in a timely fashion to current and anticipated new citizens, the County has several choices: (1) build and staff new fire/rescue facilities at appropriate locations; (2) encourage the volunteers to build new facilities at appropriate locations; (3) work with volunteers to provide sites at appropriate locations and at low cost. The volunteer system has provided very adequate service in the past to citizens of the eastern Loudoun area. Therefore, it is recommended that the County select one of the latter two options to insure public safety. The volunteer system is by far the most cost-effective from the point of limiting tax dollar expenditures.

### **3. Staffing:**

New volunteers rarely are recruited from low density, single-family homes. Where possible, new facility locations should be recommended at locations near moderately valued homes.



4. Location:

There are several proffered sites for fire/rescue in the eastern Loudoun area. The site on Route 637 at Mirror Ridge best fits the criteria and is recommended as a fire/rescue site if it can be obtained as such. Presently, it is proffered as a library site. As the new communities of CountrySide and Cascades reach the threshold level of 2,000 homes, other stations should follow to serve the growing population. Arrangements for a facility at Route 637 should begin as soon as possible in cooperation with the Fire Marshal and the Emergency Medical Service Council.

5. Site Identification:

- a. Sugarland Square: This proffered site is recommended for elimination as a fire station site and recommended to be used as a library facility.
- b. Future Fire Station Site: The ideal site for the next fire and rescue station is along Route 637, north of Route 7. Proposed locations:
  - i. North of Community College: The site adjacent to the community college would be very acceptable, provided it had immediate access to Route 637.
  - ii. Pocahontas (western part of Cascades) Property: A site adjacent to Route 637 on the Pocahontas tract would be worth consideration.
- c. Seneca Ridge: This site should be relocated to allow greater accessibility to the surrounding residential growth pending review by the Fire Marshal.

6. Site Dedication:

The Board of Supervisors should turn over a fee simple title to the volunteers for proffered sites as need dictates, with a covenant for returning land to the County if any use other than a fire/rescue facility is contemplated.